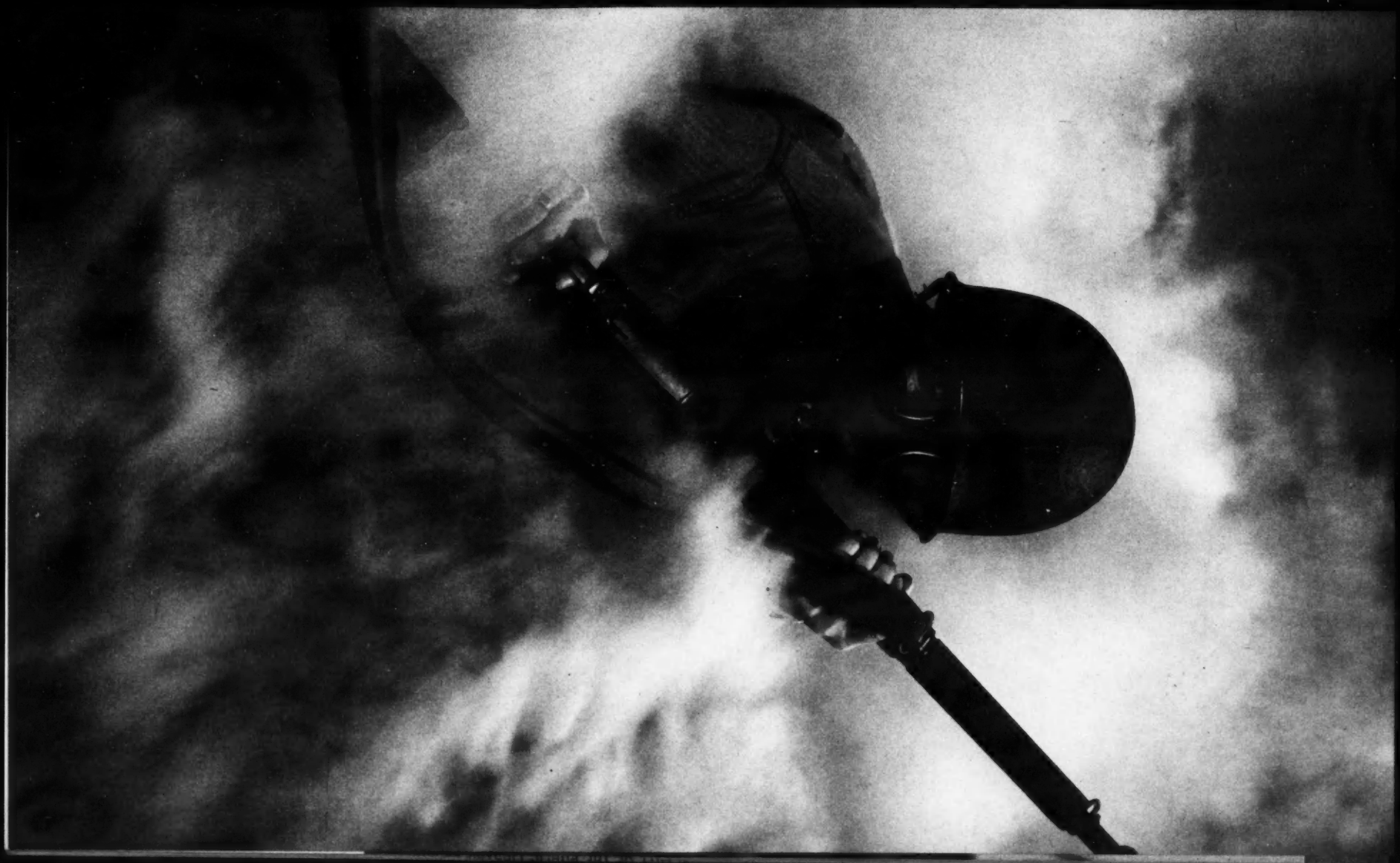
THE AMERICAN RIFLEMAN

JUNE 1943



Peter Peepsight and the JITTERS

VIC, MY BOY, THIS REMINDS ME OF HOW I FELT AT THE STATE INDIVIDUAL PISTOL MATCH IN '39
I WON'T BELIEVE YOU, BUT GO ON
"I WAS DOIN' OKAY TILL SOMEONE HOLLERED, 'LOOKS LIKE YOU'RE BRINGING THE CLUB ITS FIRST STATE CHAMPIONSHIP IN 20 YEARS'"
"THAT DID IT! MY KNEES TURNED TO GRAVY, AND MY FEET GOT SO TWITCHY I COULDN'T STAND STILL. BUCK FEVER? WORST ON RECORD!"
"MY FOREHEAD BROKE OUT IN SWEAT A FOOT DEEP, AND THE GUN SUDDENLY TOOK ON AT LEAST 14 EXTRA POUNDS."
14 LB
"TOWARD THE END OF THAT LAST STRING OF RAPID FIRE I COULDN'T SEE OR FEEL. I ENDED UP WITH A GROUP THE SIZE OF A MAN'S FOOT"
BUT MATCHES ARE GREAT FUN, AND YOU AND I CAN BE LOOKING FORWARD TO THE TIME WHEN PETERS CARTRIDGES ARE AGAIN AVAILABLE FOR THE BIG SHOOTS. TILL THEN LET'S JUST SHOOT FOR ONE "V"
POP MEANS THIS "V"

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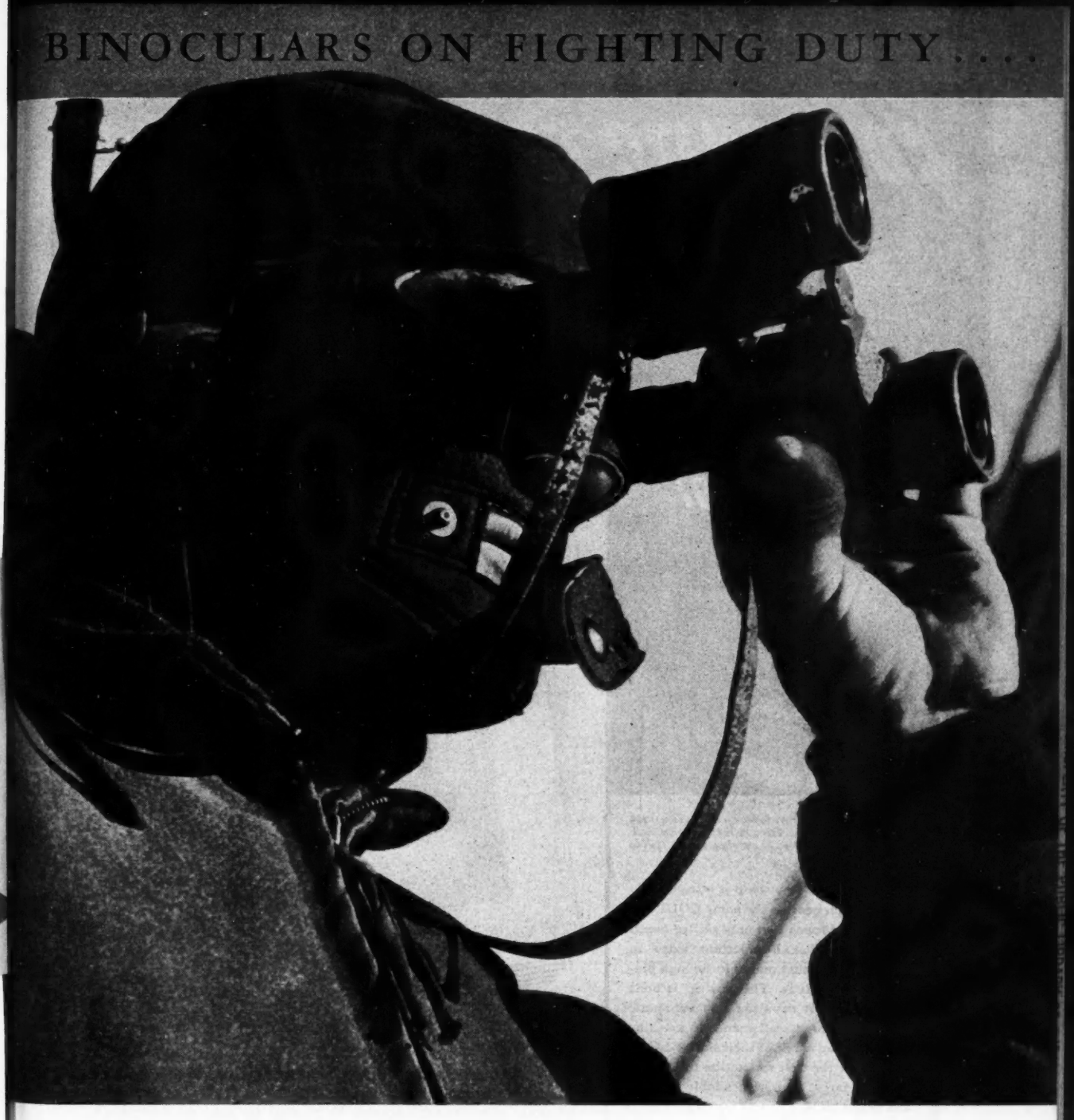

"Conning Tower! Broad on the Starboard Beam"

Pete Manning, ship's lookout, knows that sharp, brightly illuminated image means a Jap sub—preparing to attack his precious cargo of war materials. Now the entire convoy goes into action to fend off this steel shark—warned in time—because a man's trained eyes can reach miles across the water and sight a shaft of steel above the waves.

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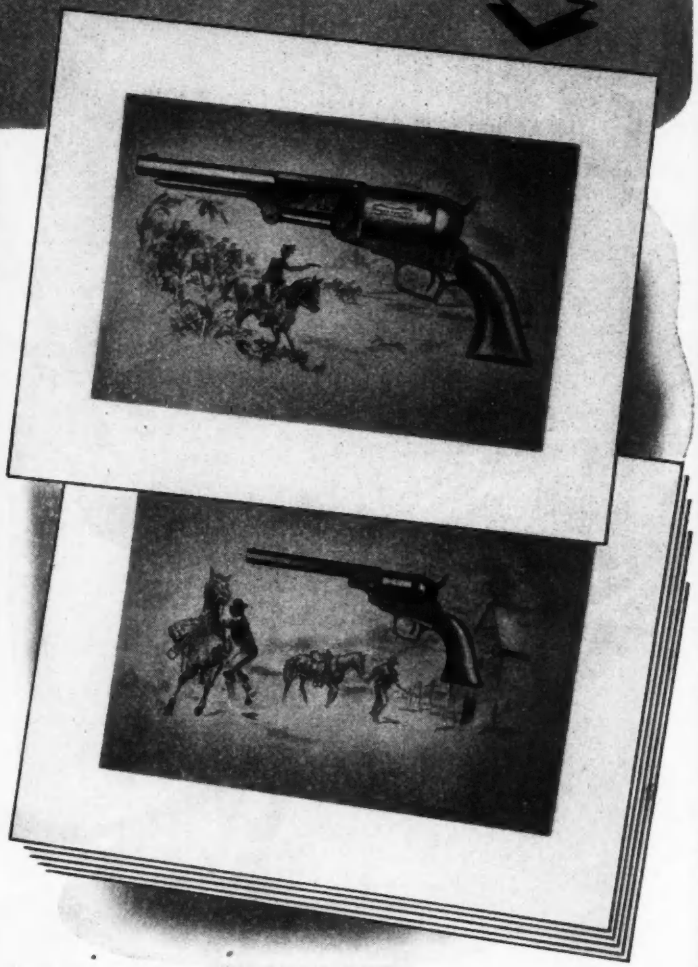

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(From an interview with an army observer on Guadalcanal, in the March 1943 issue of The American Rifleman.)

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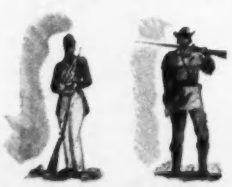

1864-1867
Mexican War of Independence

1873-1890
The Indian Wars —Buffalo Bill

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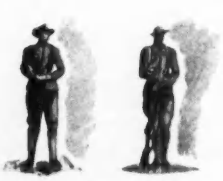

1898
The Spanish American War

1914-1918
The First World War

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The *Official Journal of The National Rifle Association of America*

AMERICAN RIFLEMAN

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THE COVER: The new American rifleman comes out from a smoke screen that has partially hidden his fighting qualities since Pearl Harbor, particularly since the retreat a few months ago in Tunisia. But now, in a glorious finish to the North African campaign, he merits our tribute—our cover selection this month, and inspiration for the editorial page. Another Kodachrome photograph released to us by U. S. Army Signal Corps.

"Turrible Satisfyin' . . ." was Joseph Hill's expression of real woodchuck hunting. And that goes for Colonel Sheldon's philosophy as he presents us with another of his interesting articles in a much-welcomed return to RIFLEMAN columns.

"Range-Finding", by Dr. Milton M. Idzal, starts us on a review of fundamentals involved in the construction of those interesting devices every rifleman would like to own in some practical form. While Part I deals with the big range finders of Army and Navy use, his second article to follow next month discusses the problems of the simpler forms a hunter might some day possess.

NEXT MONTH:

The Militia Also Serves, a story befitting the patriotic motif of our cover and contents in July——

The Sten Gun, that low-priced British submachine weapon being turned out in such large quantities these days——

Scope Developments, a follow-up to F. C. Ness' article "Scope Sights for War" in the May issue——

Training Magic, by which the Navy is now able to turn out better aerial gunners; something new and just released for print. A description by Lt. S. L. Ludlum, author of the May article, "Sky Sniper"—— and

PLENTY OF GUN TOPICS.

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Published monthly by The National Rifle Association of America, 1600 Rhode Island Avenue, Washington, D. C. Domestic rates, including all of North, South and Central America, $3.00 a year; $5.00 for two years; elsewhere, $3.60 a year; $6.50 for two years. Entered as second-class matter, April 1, 1908, at the Post Office at Washington, D. C., under Act of March 3, 1879. *Copyright, 1943, by The National Rifle Association of America*

Smoke Screen

SMOKE clouds, curling from the wreckage of Pearl Harbor, from Japanese guns on Luzon, from fierce warfare on Midway and Wake, and from ever-increasing fire and destruction in our first days of war, enveloped our American fighting man eighteen months ago. It was a smoke screen of unpreparedness and smoldering isolationism and it hid our boy from view. Except for quick glimpses in the foxholes of Bataan, on Guadalcanal, and in the air over Western Europe, we could not see just what he was.

Until then it had been fashionable to assume that America's entry into the war would have serious psychological effect on the Axis, on unwilling Axis partners, and on the lukewarm neutrals of the world. Wait until WE get in!

And it might have been, with a more favorable start. But the spoils of our early defeats were fuel for the fires of the Axis propagandist who scorned our boy as the victim of another "decadent" democracy. But more imp[ortantly], he puzzled and confused an entire world with that smoke screen of skepticism and contempt. What of the fabulous Yankee? Even we had lost track of our boy. We could no longer hope to scare our enemy into submission. Cleverly his leaders had parried our best psychological blows—our vaunted production, equipment, resources and supplies, and our record of achievement in the first World War. We had thrown the book at him, but this was a new generation and it would have to write its own record.

The evacuation of Gafsa. [illegible] The death and devastation on the road to Tebessa. "Out-fought, out-[illegible] enemy. The world only knew that America's fighting man had been [illegible] and American pride had been dealt a terrific blow.

To the world this was a smoke screen of [illegible] disappointment. Too many things *had* come easy to us in this [illegible] the world wanted this war. But we discovered that in war there is no substitute for [illegible] psychological effect would not win battles, but that winning battles [illegible] effect. We discovered that winning those battles [illegible] a matter of superior arms, superior skill, and superior aim. [illegible] what *our* contribution had been to the smoke screen of skepticism which enveloped the American soldier.

And then the complete collapse of [illegible] forces in North Africa—the greatest Allied victory of the war to date. A more [illegible] ting of the smoke screen than we dared hope, for the American boy was there, playing [illegible] ally important part. As the neutral Swiss newspaper, Der Bund, commented—the [illegible] fighting ability, which "had not been held highly by Berlin," came as a shock to [illegible] military leaders. "The Americans and French were used for the decisive blows . . . most important of all it seems to us that now the Americans have proved exceptional fighting power and extraordinary good leadership."

Only naturally a surge of optimism will follow the definition of America's fighting man. In this maze of bureaucracy, of pampered groups, of czars, of "-isms," of indecision in high places, of political meanderings and conflicting interests, Joe Citizen can't be blamed for pegging his hopes high on an American boy making good in big league combat. It's a grand feeling to discover something to tie to—to get at least one thing cleared up; to know the long-bred seeds of pacifism, educational misguidance, the attempts to shatter our concepts of ruggedness, of rail-splitting, hard-riding individualists can be overcome by the men building our fighting machine. It's good to know we can still get tough.

So never mind the optimism. It's American to be cocky, as American as the comeback those lads staged in Tunisia. Fighting mad, but confident—and confidence never hurt any cause. It's the confusion, the bewilderment, the mishandling of affairs back home that breaks down morale and provides the fuel for Axis propaganda.

This is a tribute—a tribute to the American boy emerging from a smoke screen which was not of his own creation; a boy who has matched the finest traditions of our fighting men. It only remains for us to match his determination, his spirit of Americanism, and disperse the clouds on the home front.

"Turrible Satisfyin'....."

By COL. H. P. SHELDON

IN THE MINDS of many, my own among them, the woodchuck is associated with the first glorious warm days of spring, with shadblow and cowslip greens, with brook trout and horseradish, with bullheads in the Powder Mill Pond, and the throbbing drum beat of the pa'tridge.

Temperamentally, woodchuck shooters, the real 120-proof variety, belong in the same category with fly fishermen. They are the experts, the devotees of fine precision and detail and the untiring pursuers of perfection in skill and equipment. They probably have more fun than most people do, for the profits derived from their recreations do not depend principally upon the number of trout taken or of woodchucks killed. In localities where woodchucks are really pestiferous there is good reason to justify intensive shooting, but it is unwarranted and even unsportsmanlike to try for big counts of tails in regions having only moderate populations of woodchucks. The rifleman's responsibility to his community is to prevent excessive crop damage by woodchucks and also to prevent the extermination of the animal, for woodchucks, like other creatures, have useful qualities and functions.

Unquestionably the best 'chuck shooting is to be had during that time between the starting of new grass, and the stage, two or three weeks later, when it has grown so high that it covers the game, at least in the meadows and fence rows. Later, in July, when the hay has been cut, shooting can be resumed and carried along into September. Spring shooting is undeniably more enjoyable than midsummer, but it has the great disadvantage that the bullet is likely to knock over a mother 'chuck with a litter of helpless young in her den. It is better, perhaps, to use the short-grass time to investigate the shooting grounds, locating the burrows so that they can be visited again later on when the domestic affairs of the woodchuck are in better order and one can shoot without self reproach.

In May one can drive along a country road and if his eyesight is at all keen, he is able to spot almost every

'chuck within range of his vision for their dark bodies stand out against the fresh green of the country-side. It is also true, as a friend points out, that at this season the droppings of horses and cattle have little or no protective coloration and are often mistaken for 'chucks by earnest riflemen, to their subsequent discomfiture.

In July and August when going over the same route the rifleman will seldom glimpse a woodchuck although there are plenty of them about.

Now his method is to proceed to some point within range of a den, make himself comfortable with tobacco and begin a careful scrutiny of the surroundings, paying particular attention to rock piles, stone walls, stumps and the sheltered roots of trees. A pair of binoculars is a great help here, or the 'scope sight may be used although it is rather awkward to handle. At this time woodchucks are not so active as they were in May; they are full fed and the mating season is over and with the universal irritants of love and hunger removed, the woodchuck takes life easy, sunning himself on a rock or stump or on the parapet of his burrow. And there the rifleman will locate him if he is patient and thorough.

It is amazing how woodchucks will materialize from an apparently deserted stone wall under the scrutiny of a good glass. Veteran shooters know that the fact that a man is intent upon seeing the outline of a deer in a thicket helps him to pick up that telltale outline when his vision encounters it, but not that of the grouse, for example, standing in much clearer view. Or, if he is hunting grouse, he is more likely to see the bird before he sees the deer. Possibly the Greeks had a name for this phenomenon, but "hunting instinct" will do.

Whatever it is, the lack of it makes the "unlucky" hunter; its possession the "lucky" one, whether the game is woodchucks or Jap snipers. If 'chuck stalking requires justification beyond that of recreation, it can be found in this: that it helps to develop this magical quality of perception, of really seeing what one is looking at. It is a rare quality.

The intelligent woodchucker soon discovers that the main object of his game is not just to slaughter woodchucks; it is to test and develop his own skill and to demonstrate the precision of his rifle and ammunition, and, perhaps, the serviceability of his equipment. Thus a capable shot gains nothing from shooting an unsuspecting 'chuck in the face at 50 yards with a rifle capable of hitting the same target at 300 yards. He has merely done something that was easy for him to do and which he already knew he could do. The result is a dead woodchuck, a wasted cartridge and nothing more.

Now, this is not to say that a 50-yard shot is always unprofitable, for it may not be. The complications set up by cover, by light, position and dozens of other conditions may constitute a real problem and a real test. It is equally foolish to say, arbitrarily, that no shots should be taken at under 100 yards, or 150 yards or any other distance, for range is only one of the factors in the setup of a sporting shot. Perhaps, and this is said by way of advice rather than as an admonition, the kind of shots the 'chucker should seek and take are those that are well up toward the margin of his skill; the kind that he feels he can make if all goes well with his estimates, his hold, his squeeze, his rifle and his cartridge. Then, if he scores, the result is, as Joseph Hill would say, "turrible satisfyin". If he misses he has at least added a bit to his knowledge of shooting. This all refers to shooting for sport alone, not for food alone and not even for sport and food.

The war is teaching us again the lesson that a fairly good shot who is also an expert stalker is more effective in combat than an expert rifleman who knows nothing about stalking,—that patient craft by means of which a man cloaks himself in silence and invisibility. The ability to stalk is of utmost importance to the practical rifleman who shoots to kill. If he has it, a man can make his kill with a round ball in a smooth-bore muzzle-loading musket; if he lacks this skill no perfection of his shooting equipment can make up for the lack. The perfect combination in game shooting and in combat is that of a fine rifle in the hands of a fine stalker.

The woodchuck is an expert critic of the technique of stalking, especially so if he has been shot at once and

. . . "there is no substitute for those evenings in the open, the talks about the campfire"

missed. The least error on part of the hunter will send him into his burrow, leaving the rifleman to discover the nature of his error. And that is exactly what he should do if he wishes to make progress in the craft. A mistake made, understood and corrected on a New England hillside certainly contributes something to the sum total of a man's hunting skill and efficiency, and we can learn more from our errors than we can from our unchallenged successes.

There are two kinds of cover, and they might be called "solid" and "loose." Solid cover consists of some natural or artificial obstacle, like a stone wall, a mound, a stump or a rock through which he cannot see or be seen. It offers the easiest method of approach.

"Loose cover" consists of material, grass, brush, leaves and shadows, not impenetrable to his vision or that of his game but which can be used to conceal his outlines and movements as effectively as solid material. But to employ it so requires study and skill.

An experienced stalker knows that the cover in rear of his position is often quite as important for concealment as that which is in front of him. It may form a background against which his form is as visible as if the image were projected against a screen. On the other hand a rifleman can at times advance unseen from a good background with no forward cover at all, simply because the colors and shadows as well as the movement of leaves and grass render his outlines indistinct. Birds and animals can actually be invisible while posing in plain view and man, if he cares to study the matter, can acquire much of the same craft. He has the added advantage of being able to choose and change the color and patterns of his camouflage, which the wild creatures cannot do.

Movement, however, is of even greater importance than color, particularly where wild creatures are concerned. There is good reason to believe that animals and birds do not associate colors with things to the extent that man does, but they are quick to detect motion. One can learn much about stalking by observing how wild creatures move when they themselves are trying to avoid being seen. Their rule seems to be to move slowly when they have cover but to cross open spaces quickly and silently.

No one who has never used black powder rifles for 'chuck shooting can really appreciate the advantages of the modern small-bore high-speed cartridges. I confess that I am still astonished when a 'chuck at 200 yards collapses when only a two-inch allowance has been made for elevation above the 100-yard setting. The woodchuck shooters had a great deal to do with bringing out the high-speed, flat-shooting, small-bore rifles. The end is not in sight, either, for the brethren are insatiable on the subject of accuracy and speed.

I have used most of the modern cartridges from the .22 long rifle hollow point to the .277 Elliot Express, which is the .405 Winchester case necked down to take the 139 grain 7mm bullet. That was a rifle! It was extremely accurate and developed a really devastating velocity. But it was a noisy piece to touch off in a peaceful rural community.

My own preference runs to the wonderful new .22 center-fire cartridges of the Hornet and Lovell type. There are at least a dozen of them. Most 'chuck shooters are handloaders and these cases are very easy to handle. They are also very economical of powder and bullet metal, which is a distinct advantage at any time but particularly so during the prevailing shortage of components.

Two or three years ago the Remington Company in a praiseworthy attempt to find out just how accurate the Lovell R2 could be made to shoot, built ten heavy 28-inch barrels rifled on a 15-inch twist, and chambered for this excellent cartridge. One of these fine barrels came my way on a Sharps Borchardt single-shot action fitted by Mr. George Hyde. It is, I think, the most accurate rifle that I have ever owned or shot. It is good for one-inch groups at 100 yards and occasionally on a calm day it will turn in a five-shot group that does not exceed one-half inch. The other barrels in the hands of some of my friends have likewise established records for extensive accuracy. Until some other woodchucker turns up with something better, I'll continue to think that I have the best groundhog rifle in the United States.

Years of experience with bolt-action repeaters of all kinds have made me appreciative of these rifles, but have never caused me to lose my devotion for the fine old single-shot actions for 'chuck, squirrel and small game shooting. The Ballards, Winchesters, Sharps Borchardt, the Remingtons and Stevens single-shot rifles were and are very close to perfection from a mechanical point of view and they were beautiful things, too. I question if today with all the advances in the science of ballistics, mechanics and metals, we could turn out single-shot rifles much superior to those old reliables. If I were the only one to *think* so, I'd not have the effrontery to *say* so, but I observe that many keen riflemen as they progress in the craft eventually acquire single-shot actions and become interested in the refinements of accuracy.

Some have said it is unsportsmanlike to use the scope sight. To me it is just the opposite, for it reduces the margin of error and promotes clean kills or clean misses. Every decent hunter hates to cripple game.

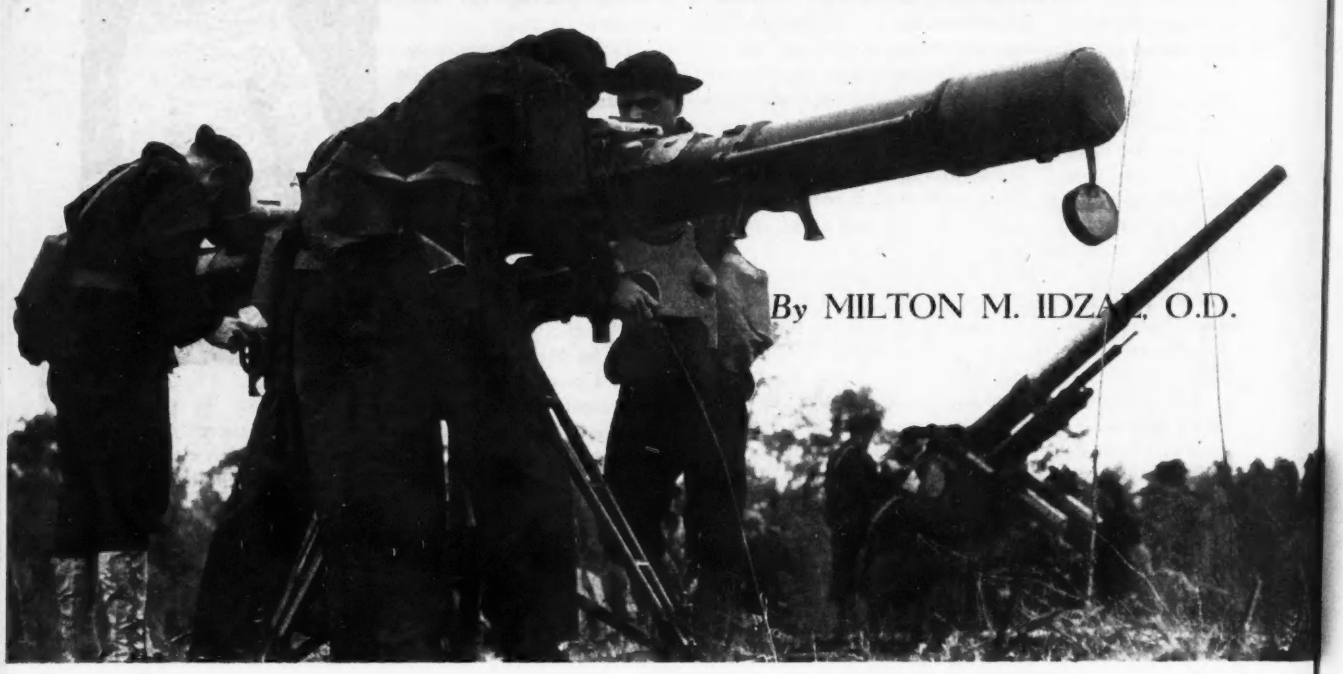
The 'scope sight is a safety device, too, for it enables the shooter to identify his target. No one would think that a man could look like a woodchuck, but men have been shot at because someone made that mistake. Pigs, sheep and cattle have been killed through the same error. It happens often enough to convince the most doubtful and to make sensible people take extra precautions to avoid being tragically mistaken by what their eyes are seeing. The writer has upwards of half an ounce of shot in his anatomy because he looked like a gray squirrel to another hunter.

The shooting stick is another item of useful equipment, especially so if the rifle is a heavy barreled weapon.

And there used to be still another gadget that woodchuck shooters thought was indispensable to their trade. Everyone had one in the old days. The name of the thing was the horseless carriage. I don't know how we shall get along without them this season, but we shall probably

(*Continued on page* 16)

RANGE-FINDING



By MILTON M. IDZA[illegible], O.D.

The important job of locating the enemy is now accomplished by mechanical-optical science

YOU HAVE FOLLOWED instructions and at the same time used your initiative. Your battery is placed commanding the road over which the enemy will come, if he comes. Your 75's are placed just below the brow of a little hill well covered with scrub trees and brush. Your camouflage net has been spread overhead and covered with leafy branches.

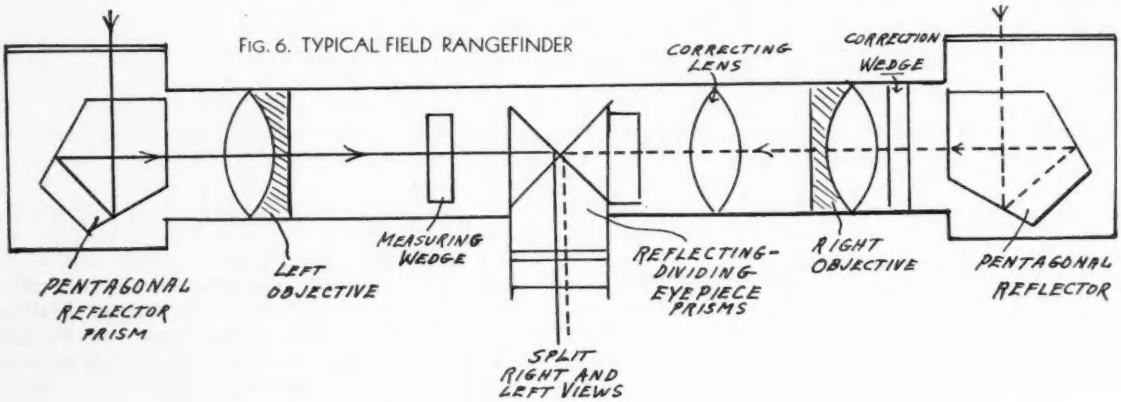
Your men have wormed themselves through the weeds at the top of the hill for a look-see, and now report signs of possible enemy activity at the top of a little hill some distance away and straight down your road. You personally take your stand behind the thickest tree you can find at a spot suitable for observation, and with your binoculars glued to your eyes cautiously stick your head out for a good look.

Sure enough! A telltale whirl of dust! The flicker of a caisson as it wheels off the road! A movement among that patch of brush! They are setting up *their* battery!

And who is that cautiously sticking *his* ugly mug out—binoculars and all—and looking you practically straight in the eye? The Boche!

You slowly pull your neck in, making no abrupt movements, and hope he hasn't seen you. Your guns are loaded to the muzzles—canister, grape shot and Grecian fire. Where's that range finder! You personally place your eye to the eyepiece and take range on the tree behind which the Boche is lurking, and hope it hasn't been banged around too much on the way up. Your range

FIG. 6. TYPICAL FIELD RANGEFINDER



finder, that is. You make it 2850 yards and transmit the necessary data to your men.

If the enemy has also spotted you, he is probably taking range on you at the same time. It is your range finder against his. Whoever fires first and hits will live to tell the tale.

Your field range finder has a base length of about one meter (40 inches) and is probably accurate within 2 or 3 per cent if you have done your part properly. There is, of course, always the human equation to be considered.

If your instrument works better and faster than that of the enemy, you can be first to toss a few shells over and clean him out nicely before he can get his outfit set up.

Our modern range finders represent a brilliant piece of optical design and almost miraculous mechanical accuracy. These instruments have a longer history than is generally realized, dating back to somewhere around 1775. All have certain basic principles in common which we will take up later—and I am sure without giving away any new information to the enemy. One thing is certain. If you want to find out how far it is from here to there without throwing a rock with a piece of string tied to it, you will become involved in triangulation, trigonometry or optics, or all three.

Let's start with the easy stuff first and gradually work up to a fine tangle. Assuming, of course, that you DO want to get some idea of how a range finder works—perhaps even to the point of going down in your cellar and making a homemade range finder out of two pieces

Optical science nowadays finds the targets and lays the guns accurately on them.

of your wife's vanity case mirror and some ¼-inch oak flooring like I did. Mine is nothing fancy and made merely for experimental purposes, but even this works pretty well up to about 150 yards.

But profiting from my mistakes which I shall tell you about, I see no reason why a homemade range finder can't be made to work up to say 500 yards or maybe more if you have one of those short two dollar telescopes to stick onto it.

I have always felt that articles of this kind presume too much previous knowledge of the subject on the part of the reader. This time I am going to assume that you know nothing whatever about range finders.

To really start this right you should dig up your old high school arithmetic book and find the section that deals with triangles and triangulation. You will probably find a problem that goes something like this: (Fig. 1) You wish to extend a telephone wire (or find the range) across a small lake from point A to point B, and you want to know how long a wire will be needed. Out on the field you measure the distance to a third point known as C from both points A and B. Standing at C and sighting over a protractor you make out the angle between lines AC and BC to be 80 degrees. Then you go home and draw your layout on paper to exact scale, being careful to get your 80 degree angle correctly. Then measure across your lake with a ruler. This will give you the exact distance you want to know.

There are a number of variations to this method which include, for instance, the possibility of finding how high a kite is flying by determining the angle of sight between the observer to kite and an imaginary line drawn to a point directly beneath the kite.

All of these methods require the actual measurement of two sides of a triangle (Fig. 2) and the use of some simple instrument such as a protractor to determine the angle between the two known sides. Then all you have to do is go home and reproduce these factors on a piece of paper exactly to scale, and with a ruler measure the unknown side of the triangle. All of this, however, is mighty unhealthy if a portion of the Afrika Korps is at the moment getting ready to lob a few shells on your home. There must be a quicker way.

The next step forward in the art of determining unknown distances is by the use of tangents. By this method you need to know only the length of *one* side of your triangle. (Fig. 3) Your known side or base line A-B forms a right angle with a line sighted to your target, B-C. Then you go over to point A and sight both to point B and to the target C and determine the angle thus formed between the two imaginary lines. Here we have a cinch. Rule: *In right triangles the ratio of the opposite side to the adjacent side is always the same for equal angles.* Thus, base line is 100 yards long. Angle A is 43 degrees. Table of tangents shows that where angle A is 43 degrees the ratio of the opposite side of the triangle (B-C) to the adjacent side (A-B or base line) is .93. Thus your unknown distance or range will be .93 x base line, or in this case 93 yards.

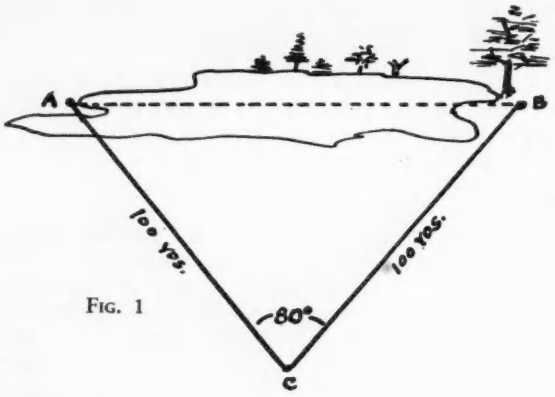


FIG. 1

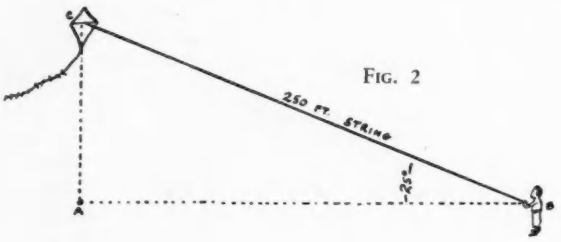


FIG. 2

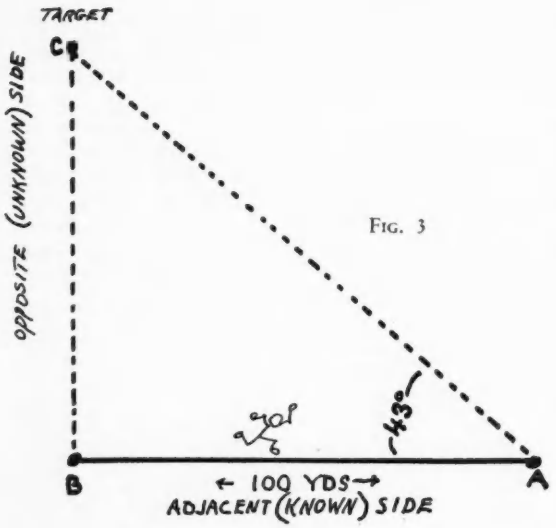


FIG. 3

Here are a few angles and tangents:

If angle were 13 degrees multiply base line by	.23
20 degrees	.36
30 degrees	.58
35 degrees	.70
43 degrees	.93
55 degrees	1.43
65 degrees	2.14
76 degrees	4.01
85 degrees	11.43
89 degrees	57.29

These are enough to give you the idea. A complete table of tangents will be found in almost any arithmetic book.

One thing you will especially notice. In order to get your range by this method you take a sight on your target from point B, then walk along your base line at right angles to your target until you get to point A where you again take a sight on your target to determine the angle with which you will do your figuring. This is actually the way one of the earliest means of taking range was performed. Later they used two men. One man stood at B and another man at A. They each used little sighting instruments (theodolites) to determine their angles, and the two men were tied together by a rope of known length. The rope was the base line.

In other words, in order to take a range the target must be observed from two different points. There is *still* no other way to do it. However, modern rangefinding instruments incorporate the "base line" *in the instrument* and by means of lenses, prisms or mirrors enable the observer to take his observation from two points simultaneously. And furthermore they automatically do the figuring for him at the turn of a dial.

Nor is it always necessary to calculate the range on the basis of a right triangle only. I illustrate this method to make it easier to follow. Actually the basis of modern rangefinding is that of trigonometrical ratio. The base length of the finder is the base of a triangle, the apex of which is the target. Add to this the fact that some instruments may be 100 feet in length; ranges up to 60,000 yards may be involved; the target may be moving; your gun may also be moving; windage may be included—and there you really have something. In the big setups the various information factors are fed into calculating devices which deliver the answer right *now*. With the addition of telescopes and magnifying devices the image of the target is greatly enlarged, further contributing to accuracy.

The fact that rays of light emanating from the target obligingly travel in a straight line make it possible to construct these instruments as though long pointers were aiming from each objective lens to the target.

Regarding the accuracy necessary in constructing these instruments, Professor A. F. Macconochie of the University of Virginia says in a recent article in "Steel": "If we attach pointers *two miles long* to the range finder and bend the frame so that while one pointer remains stationary, the other pointers moved ⅜ *inch* at its outer end, the errors introduced will exceed 1 per cent at 3000 yards."

From the illustrations we can see that light can be controlled and bent at various angles in such a manner as to bring the images from two different objective lenses together to emerge from a single eyepiece. As all military and naval range finders are based on the telescope, let us first look at one of these familiar instruments in detail in Fig. 4. Then let us see how two telescopes are put together so that one man can draw a bead from two places at once, Fig. 5. In order to simplify matters for the observer, the eyepiece is designed either to deliver a doubled picture which he can "match" or a split picture which he puts together by means of his controls. These instruments are called the "coincidence" type. The photograph shows the split image. The adjusting lath illustration shows the doubled image. The observer turns his dial until his images line up properly, then reads off the distance indicated on the dial in yards.

The longer the instrument, that is, the farther apart the objective lenses are, the longer the base line provided for the triangulation problem. The longer the base line, the more accurate the answer is apt to be. A slight error

means less when the base line is longer. Thus an ordinary field artillery range finder may be one meter in length. An antiaircraft instrument may be 15 feet long. The range finder on a battleship may be censored feet in length and weigh plenty.

When they make these new instruments, the accuracy of the lenses and prisms involved are checked not in inches or millimeters but in *wave lengths* of light. One optical firm in this country, Bausch & Lomb, has for many years been the heart of this particular science. They turn out these instruments with unbelievable accuracy.

Early instruments used plane mirrors at the objective ends of either telescope system to bend the light toward the center eyepiece. Later pentagonal prisms were substituted for this function with an increase in accuracy, as the entering beam of light is held always at right angles to the emerging beam. In the U. S. Army instruments, even the one meter instrument uses pentagonal prisms. They cost lots of money.

The M-1916 Range-finder is equipped with buffer pads on the ends which effectively protect it from rough handling in hard, vigorous service.

All the various parts are mounted in such a manner as to minimize the effects of shocks, bumps, temperature changes and so on. But even with the most elaborate precautions they are subject to getting out of adjustment.

FIG. 4 - COMPOUND TELESCOPE

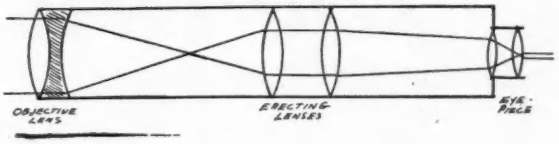
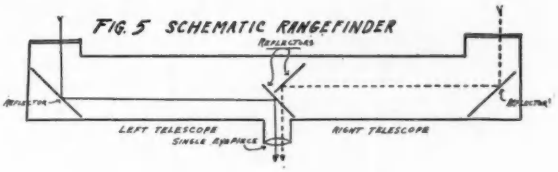


FIG. 5 SCHEMATIC RANGEFINDER



With a reasonable amount of training, however, a man can learn to manipulate the various adjusting controls to put the instrument back in correct register.

One of the simplest ways of adjusting a range finder is by the "known range" method. This consists of sighting on an object of known and measured distance, then setting the indicating dial to correspond. At the factory they take them out on the roof and sight on a water tower or chimney of known distance. For infinity adjustment the instrument may be ranged on the moon. In certain cases an "adjusting lath," is used. This consists of a metal strip upon which two vertical lines are painted. These lines are exactly the same distance apart as the optical axes or optical centers of the two end windows of the range finder under adjustment. These adjusting laths are individually made for individual range finders and are numbered and used only for the instrument for which they are made. (Fig. 8)

From the various illustrations in this article you can see that an object of some size must be sighted on in order to "split" or double and then to match or secure coincidence.

Suppose it is night. Off in the distance is a tiny speck of light. It is known to be the location of an enemy installation. The light is too small to split or duplicate with any amount of certainty. You slip your "astigmatizer" into the optical system of your range finder. This draws your tiny speck of light into a long narrow streak which enables you to work on it. The astigmatizer is a cylindrical, rod-like piece of glass which has the effect of distorting a point of light either vertically or horizontally according to the type of finder in use. There are usually provided amber and smoked lenses to be used under indicated conditions, as well.

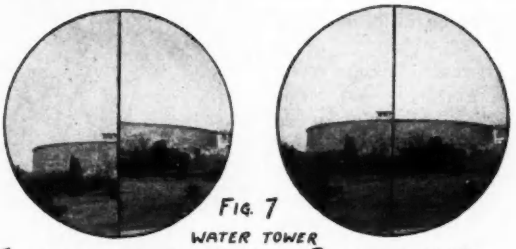


FIG. 7
WATER TOWER
A- OUT OF COINCIDENCE - VERTICAL B- IN COINCIDENCE

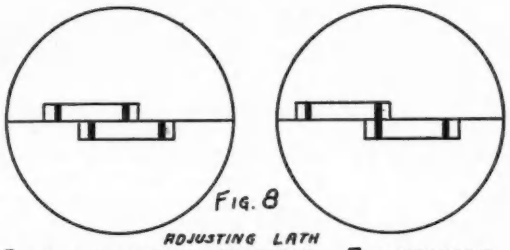


FIG. 8
ADJUSTING LATH
A- OUT OF COINCIDENCE - HORIZONTAL B- IN COINCIDENCE

All of the range finders we have been discussing are,

(*Continued on page 22*)

The Bricks Come Tumblin' Down

By GEORGE HEAP

TAURUS GONZALES was a very sad sheepherder. He leaned his brawny weight against my vise, slowly took off his sombrero and spun it around on the index finger of his right hand. I watched, fascinated, out the corner of my eye as I finished filing an auto key.

"No more .44's?" said Taurus. There was deep sadness in his voice. Sadness such as he might have felt for the departure of a dear friend or a good sheep dog. "But why?"

"Because," I said, "the Government needs ammunition to shoot Japs. The dirty coyotes. Look what they did to us at Pearl Harbor."

"And," mused Taurus through his whiskers, "look what the black coyote did to my sheep. He is wise and he comes and laughs in the darkness because my .44's are gone. He knows—the black devil. It would be better to give me .44's and save the sheep to feed the soldiers."

Taurus was inconsolable. I picked up an 1890 Winchester and placed it in my vise. I found the trouble easily enough and soon was working on a .32-40 Winchester single shot.

"I have a gun like that," said Taurus. "Here in town, at my brother's house. We have it thirty years. You remember Bob Hiple, the undertaker. He bury an old man; the old lady give Hiple the gun and Hiple give it to me. No ammunition. My boy rolls marbles through the barrel."

I was interested: S.S. actions had some value. "Bring her in," I said.

Taurus returned in an hour with a beautiful large frame Winchester single shot. I examined the barrel: a fifty, .50-110 Express. I got out my old Winchester catalogue. Then I dug out the old ammunition case from the back of the shop, and from its aged dust I retrieved fifty .40-110 Expresses and a .50 caliber Government mould.

"Taurus," I said, "your troubles are over. I'll fix you up with some ammunition for the Express."

"I'd rather have my .44's," said Taurus.

"Now, first thing Taurus, you pull these bullets with the pliers, take out half the powder, stuff some paper tightly in the neck of the shell; then go outside, shoot the blanks, and bring me the empties."

A few reports from the old Winchester came in to me, and then a deal of arguing between Taurus and another man whose voice I recognized as that of the town Constable. I'm from New England. I never did get used to calling him a Marshal. Soon the argument subsided, the shooting continued, and Taurus and "Little" Bill Doheny wedged their way into my shop.

"I'm fixing Taurus up with a coyote gun. He can't get any cartridges for the .44. If you two gun men will get out a pot of lead, and run me some bullets, I'll load some real loads." Taurus and "Little" Bill retired to the back of the shack and built a fire in the kitchen range. The hot afternoon New Mexico sun and the fire conspired together against us inside my repair shop. "Little" Bill was no amateur at casting bullets, and he soon had a fine batch of 450-grain Government bullets. After some search I found some F.G. black powder, and set the Ideal measure at 100 grains.

The old Winchester catalogue gave the shell length of the .50-110 as $2\frac{4}{10}$ inches. A hack saw and a file finally gave me fifty good empties of the proper length. "Little" Bill primed the cartridges while Taurus measured the powder. I reamed the case muzzles with my pocket knife until the bullets fitted without scraping. The drill

press did the seating, and Taurus' new coyote gun was ready to be lined up. The old rifle had a fine set of peep sights, and I laid the rifle lightly over my rest, held the tiny front bead on the center of the bull at fifty yards. A great flash of flame and smoke! One of my windows fell out! And far away on the flats a cloud of white dust rose, and then another, and another. Either

I had missed the target or the bullet had gone completely through the backstop of 12 inch pine. My shoulder recovered its sense of feeling after a bit, and my shocked nerves eased back into place.

I heard "Little" Bill shout, "Dead center. Shoot us a group."

"NO," I said, "nice gun to shoot, but too much noise, and Taurus will need the ammunition. Some Sunday we'll go out and try her on a coyote. Want to try her a round?"

"No," said "Little" Bill, "I just bit off a new chew."

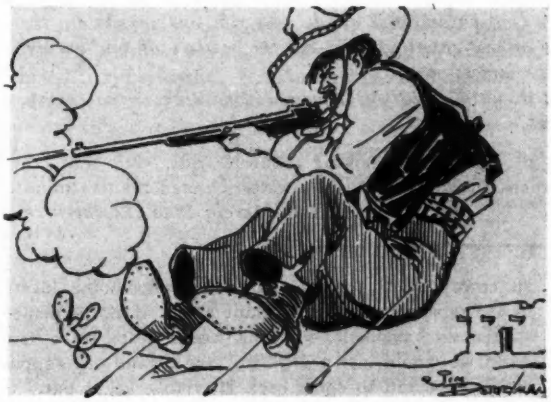
So Taurus took his treasure, still bemoaning the fact that he could get no .44's. After he had gone I got out the Ideal catalogue and found the .50-70 took a bullet about .02 larger than the .50-110. No wonder that rifle kicked. I never made a luckier first shot.

A month later Taurus returned to the shop.

"I have a box of .44's," I greeted him.

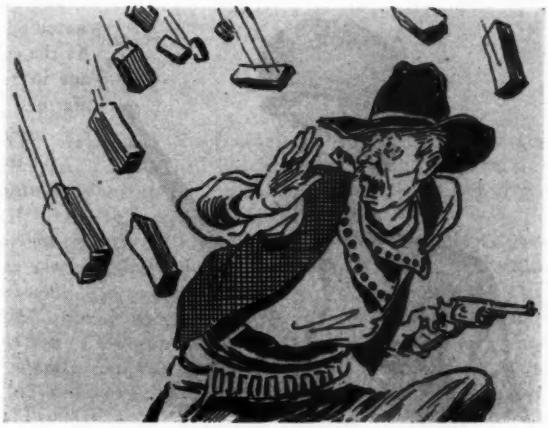
"No," said Taurus, "I have the .50. She is some gun. I catch that sneaking coyote at sundown and I hold under his tail. Boom! A lot of smoke, a red flash and that is the end. Also my friends will not shoot the gun. One shot is all they ask. I save much shells. The .50 will last always. I only shoot when I need to shoot. I thank you."

The next day "Little" Bill entered my shop. "Did you



hear the shot last night?" he inquired. "Yes," I said, "and it sounded like the .50."

"It was the .50. About sundown Taurus was thrown out of the Coronado Tavern. They called me to arrest him. Three minutes after sundown I saw a flash of flame from four blocks away. The next thing I knew the bricks of the Coronado's chimney began to fall. One



brick fell on Comanche's head. Another crashed on a saddle horse. He broke away and fell through Cohen's window."

"Where is Taurus?" I asked. "In jail?"

"What did Taurus have to do with it?" inquired "Little" Bill. "Listen man, if you want to arrest a sheepherder armed with a .50, you go ahead and do it. I'm neutral in that fight. I told Comanche if he wanted Taurus arrested I'd take up that little matter about his liquor license. So now he admits Taurus had nothing to do with shooting down his chimney. Can't you get Taurus a more reasonable gun?"

"Bill," I said, "you had as much to do with fixing up that outfit as I did. You've got a B card. Let's go out to Taurus' place on Sunday, and see if we can get a shot at a coyote." "Little Bill" stood kicking up the dust with his toes. "You and I," he said, "were born too late. There's no more adventure in the world. Think what that .50 would do to a buffalo. And here we gotta figure on shootin' a miserable coyote. Too bad."

A distant boom came to our ears.

"There goes the chimney off the Bank Building," I said. "I suppose Taurus had his loan refused."

"Aimed Shots, Meant to Kill"

"AS YOU PRACTICE, so you will perform. If you handle your weapon in a carefree, slipshod manner, you will do the same on the battlefield when the chips are down and the stakes heavy."

"Confidence in yourself and your weapon is one of the prime requisites of a real soldier."

This was the advice given trainees in the Field Artillery Replacement Training Center by Major Samuel Woodfill, hero of World War I, as he began a week of lectures to the thousands of men who are taking their 13 weeks' basic training at Fort Sill, Oklahoma.

A thorough knowledge of his rifle, pistol and his physical qualifications and hours of practice stalking game were credited by the major with playing the most important part in his feat of wiping out three enemy machine gun nests and snipers' nests.

"You men are artillerymen," the major reminded his trainee audience, "but in today's war you are required to use the same skill with the small weapon as the infantryman. Paratroops, tank destroyers and snipers are after the artillery positions.

"Today's war is no longer fought in the front lines—it is scattered all over the combat area. We should not forget that small arms are the most deadly weapon in the war today—all shots with small arms are aimed shots, meant to kill."

Major Woodfill spent three months in the front lines as a lieutenant in the last war, during which time he immortalized himself, in the words of General Pershing, as "the outstanding American soldier of 1917-1918."—From *Army Times*.

A Boy and a Rifle

The other night we were sitting in the Astor Theater on Broadway watching the Pete Smith short subject, "Marines in the Making." At the end of the picture a lean Marine corporal in neat khaki stepped out in front of a color squad and recited the *"Rifle Creed of the Marines."* The corporal said:

"This is my rifle. There are many like it, but this one is mine.

"My rifle is my best friend. It is my life. I must master it as I must master my life.

"My rifle, without me, is useless. Without my rifle, I am useless. I must fire my rifle true. I must shoot straighter than my enemy who is trying to kill me. I must shoot him before he shoots me. I will!

"My rifle and myself know that what counts in this war is not the rounds we fire, the noise of our burst, nor the smoke we make. We know that it is the hits that count. We will hit!

"My rifle is human, even as I, because it is my life. Thus, I will learn it as a brother. I will learn its weaknesses, its strength, its parts, its accessories, its sights and its barrel. I will ever guard it against the ravages of weather and damage as I will ever guard my legs, my arms, my eyes and my heart against damage. I will keep my rifle clean and ready. We will become part of each other. We will!

"Before God I swear this creed. My rifle and myself are the defenders of my country. We are the masters of our enemy. We are the saviors of my life.

"So be it, until victory is America's and there is no enemy, but Peace!"

That was all. Just a boy talking about his rifle. But that crowd of New Yorkers, sitting in the dark theater, cheered for five minutes.

—From *March, 1943, Leatherneck.*

"Turrible Satisfyin' . . ."

(*Continued from page 9*)

have to learn. It is almost certain that the gasoline shortage will result in an increase of the woodchuck populations, especially in the remote regions which are not accessible to city riflemen except by automobile. The problem will be to control the excess populations before they multiply to the degree where the landowners are forced in self defense to use gas and other exterminators. It's a poor end for the fat, courageous 'chuck to be smothered in his own castle. Any self-respecting creature would prefer, if it had a choice, to take a rifle bullet out in the sunshine and, as Kipling advised, "Go to his God like a soldier."

In the days before the advent of the automobile we organized "camp hunts" to enable us to shoot game in regions beyond easy reach of the home base. The same device should work as well now as it did then, both for woodchucks and later in the season for other game. It would be especially suitable for people who have three or four days' leave at a time, who wish to make the most of it, and who need to get clean away from the strife and tumult of city and factory.

It was customary for two or three good companions to get together and assemble the necessary food supplies and camping equipment. Sometimes we would know of an empty shack, or an abandoned schoolhouse located in the region we wished to hunt over. If no permanent shelter was available, someone would scare up a tent. Then we would hire a "rig" to take us and our supplies to the spot and to come back later to take us out.

In that fashion we managed to spend several days at a time in good game country at considerable distances from our homes. We hunted deer, ducks, grouse and squirrels from such camps, and we fished trout on the faraway mountain streams. The practice was gradually abandoned as the automobile was developed, for the car enabled us to visit these same regions, shoot or fish all day, and return at night to our suppers and our beds—to do the same thing the next day if we wished. Automobile hunting is easy and comfortable, but it has no substitute to offer us for those evenings in the open, the pleasant occupations that engage one at such times, the quiet friendly talk about the campfire, the sound of the owls in ghostly conversations of their own upon the hillsides, or the wild mocking mirth of a loon somewhere on the moonlit pond. If the shortages of this and that can do no worse to the American sportsmen than to compel us to substitute leisure for haste; to give us better opportunities to extend our knowledge and appreciation of the world of woods, hills and waters, to exchange for the products of the delicatessen, meat that we have stalked, shot and cooked in the same simple pattern of our ancestors, then we shall still have much to be thankful for.

Setting Your Sights

THE PATTERSON FORMULA

By WALTER F. ROPER

TO MY FRIEND, the late Mark J. Patterson, we rifle shooters owe our thanks for working out a simple formula for correctly determining the setting of the sights of any rifle for any range, and also for easily finding just how much the elevation must be increased or decreased from the setting correct for one range when it is desired to shoot at some other range. For several years before his death on December 14, 1942, I had urged him to write an account of his experiments and studies. Ill health prevented him from so doing. The results of his work are, I believe, of such practical value and of so much interest to riflemen that I am going to attempt to record as well as I can the data he would have been able to put down.

Asked how he happened to make the study that resulted in the formula, Mr. Patterson replied something as follows. Some years ago I wanted a rifle of the modern high velocity type that would be safe to shoot on a range I had had constructed in a sparsely settled section of country near my summer home at Chatham, Mass. After much thought I purchased a Winchester Model 54 rifle chambered for the Hornet cartridge. As the shooting game I wished to play consisted of shooting a single shot at each of several ranges each day and judging my success by the number of hits for each session, my first job was naturally to determine the correct sighting for the different ranges I planned to shoot.

As a guide in obtaining the correct setting for different ranges I used the method suggested in a booklet put out by one of the large arms companies which stated that if a rifle were correctly sighted for one range, it can be correctly sighted for some longer range by raising the rear sight as many "minutes" as there are in the difference between the angles of departure for the two ranges. For the ammunition I was using the angle of departure for 25 yards (the range for which I first sighted the rifle) was given as .76 minutes. For 100 yards the angle of departure was given as 3.36 minutes. The difference, of course, is 2.60 minutes so I increased the elevation found correct for 25 yards by that amount and proceeded to shoot at 100 yards. An examination of the target, however, showed that instead of grouping around the point of aim, the shots centered 4¾ inches above that point. Something was evidently wrong. So I reset the sight to be correct for 25 yards and fired again at 100. Judge my surprise when I found that this group was also high at 100 yards. In fact, it was over 2 inches above the point of aim.

Apparently the rule given in the booklet referred to was incorrect in two particulars. First, elevation is not always added in going from a short to a longer range. Second, the difference between the angles of departure is not the correct amount of adjustment required—at least not on the rifle I was shooting. I wanted to know why. So starting from scratch with a perfectly open mind, I determined to find out how to adjust the sights of a rifle to make hits possible at any range desired without the necessity of actually shooting at even one of these ranges. Second, I determined if possible to find out how to correctly adjust the sights for some other range when the rifle is set for a given distance.

Fortunately I had ample time for such a study, in fact it was exactly the kind of a problem I desired. Whether a solution was possible or not was of no importance; the opportunity to study an interesting problem was sufficient. I will admit that it took me a rather long time to fully comprehend the correct method of obtaining the results desired. Actually it is a very simple matter and one which any shooter can easily use.

To begin at the very beginning, it is first necessary to understand about the unit of measurement we shall use—the minute of angle. This unit is used instead of fractions of an inch for sight graduations because its value is always the same regardless of the length of the barrel of the rifle, its sight radius, the drop of the bullet or any other item. A minute of angle adjustment of the rear sight moves the center of the group of shots 1.047 inch at 100 yards or, as riflemen put it, 1 inch for every hundred yards on the range. The actual length subtended by a minute of angle at 100 yards (1.047 inch) is so near 1 inch that for practical purposes the 1 inch figure is used.

A consideration of the problem of making a bullet strike a desired point of aim leads to the belief that there are one or more forces or conditions that prevent the bullet from going in a straight line from the muzzle to the target. This immediately leads to the basic requirement for sight adjustment, namely, that adjustments must be made to compensate for every one of the things that prevent the bullet from traveling straight to the target. In the following paragraphs we will only be concerned with the matters of elevation, corrections for the effect of wind being of such a variable nature they are mostly a matter of "cut and try."

The problem of determining the correct setting of the sights to make the bullet strike a desired point of aim resolves itself into finding out what conditions or forces affect the flight of the bullet and then working out the value of the compensations needed to offset the effect of these things. It is assumed that the rifle to be sighted is equipped with a modern, precision sight graduated in minutes and fractions of minutes. For all calculations involving measurements, it is obviously necessary to have a starting point, and for our purposes we are going to take the point marked ZERO on the sight scale.

A consideration of the things that affect the flight of the bullet shows that the drop of the bullet due to the force of gravity is certainly one of these. Therefore, we must determine how many minutes of angle we must increase our elevation to offset the effect of this item. The drop of a bullet in going a certain distance is, however, given as a certain number of inches or feet below a line representing the extended center line of the bore at the instant the bullet leaves the muzzle. So, as this is the

base line to be used, we must determine how much above the marked ZERO on the sight the sight must be elevated to produce this condition, and then add to it the number of minutes of elevation needed to offset the effect of the drop of the bullet.

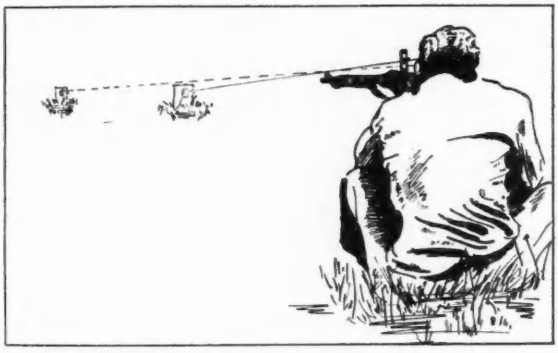
The condition described above as producing the base line to which elevation is added to offset for the drop of the bullet is what is called ZERO SIGHTING. The setting of the rear sight to produce it is best determined by shooting at some very short range over which the drop of the bullet is so small that it can be disregarded. To obtain the setting of the rear sight for ZERO SIGHTING simply adjust the sight until the center of the group is as much below the point of aim as the point on the front sight used for sighting is above the center of the bore. The setting of the rear sight for zero sighting can be obtained somewhat approximately by simply elevating the rear sight until it is as much above the center of the bore as is the point on the front sight that is used for aiming. But jump, twist and vibration of the rifle when fired make this somewhat inaccurate and the use of the actual line of departure as described first is by far the best. As we are going to develop a simple formula for obtaining the correct setting for the sights for any range, we may as well give this number of minutes above the marked ZERO on the sight to produce ZERO SIGHTING a symbol in order to save repeating many words. Let us call it EO. "E" for elevation, and "O" for zero sighting.

Having now the base line to which elevation is added to offset the drop of the bullet below this line, we can now proceed to determine the number of minutes to be added to make the bullet intersect THIS LINE when the target is reached. (Please note those words (THIS LINE) for we shall have more to say about that condition later.) Suppose now we let "D" equal the number of inches the bullet drops in going the number of hundreds of yards in the range and we let the letter "R" equal the number of hundreds of yards in the range. Now as we are dealing with minutes and one minute is 1 inch for every 100 yards in the range, the number of minutes required to offset the drop of the bullet will be equal to $\frac{D}{R}$. This is the compensation required to be added to the number of minutes (EO) already found needed to produce the condition for zero sighting. Our formula so far is, therefore, $ET = EO + \frac{D}{R} + \ldots$, ET being the total number of minutes of elevation above the marked ZERO on the sight that is required for the range R.

Please now note the words THIS LINE in the preceding paragraph as still another addition to the elevation above the marked zero on the sight must be made to obtain the total number of minutes required to make the bullet strike the point of aim at range R. In determining the number of minutes of elevation needed to offset the drop of the bullet, we used the line obtained by zero sighting as the base line from which the drop was figured. This line is, however, below the sight line an amount equal to the height of the front sight (or the fixed point in a telescope system) so that to set the rear sight to make the bullet strike the POINT OF AIM it is necessary to add sufficient elevation to offset this condition.

The height of the front sight on any given rifle is, of course, a fixed amount which we will call "H," and in inches H is the same at all ranges. Our formula is, however, in minutes so our correction for H must be in minutes, and we simply have to divide H by the number of hundreds of yards in the range (R) to obtain the number of minutes of elevation needed to offset H for any range. It will be noticed that as H is a fixed amount for any rifle, the correction required for it varies with the range, its effect being great at small ranges, and less and less as the range is increased. We now have the third factor of our formula, namely, $\frac{H}{R}$ and our formula becomes: $ET = EO + \frac{D}{R} + \frac{H}{R}$.

Before applying this formula to a practical case—that of the Hornet rifle mentioned at the start—it should be noted that the angle of departure as given in the tables put out by the makers of ammunition can be substituted in the formula for the factor $\frac{D}{R}$ instead of figuring the drop of the bullet. Naturally as the angle of departure equals $\frac{D}{R}$, the drop D is equal to the angle of departure times the number of hundreds of yards in the range.



The rear sight must be lowered in going from 25 to 100 yards

Now for the application of the formula to the Hornet.

Let us first determine the correct setting of the sight above the marked zero point for 25 yard shooting, and then check it against what was found by actual test. By test I found that for zero sighting the rear sight must be 3.54 minutes above the marked zero point. The angle of departure as given by the maker for the ammunition I use is .76 minutes. The front sight of this rifle is 1.6 inches above the center of the bore. We can, therefore, write: $ET = 3.54 + .76 + \frac{1.6}{.25}$ which when worked out gives ET = 10.70 minutes as the total elevation of the rear sight above the marked zero for shooting at 25 yards. From tests over a period of three years, I find the average elevation for 25 yard shooting is 10.75 minutes.

Applying the formula to 100 yard shooting with the Hornet we have: EO = 3.54, angle of departure $\frac{D}{R}$ = 3.36 minutes from makers table. The correction for the height of the front sight $\frac{H}{R} = \frac{1.6}{1}$; so

we can write ET = 3.54 + 3.36 + 1.6 and ET = 8.5 minutes. My tests show that the average setting for 100 yards is 8.5 minutes above the marked zero.

From these examples it is evident that with this rifle the rear sight must be LOWERED in going from 25 yards to 100 yards. The amount it must be lowered is the difference between the sighting correct for 25 yards and that correct for 100 yards, namely, 10.70 — 8.50 = 2.20 minutes. It will be noticed that this checks closely with what I found in my first test of this rifle when my group at 100 yards with the sights set for 25 went over 2 inches high. It is apparent that compensation must be made for the effect of the front sight being above the bore, especially at short range, for the correction indicated by the difference between the angles of departure does not give a correct setting of the sights.

Practically all of the problems having to do with the sighting of a rifle can be solved by this formula, but one of the most interesting is that of determining instantly just how much the sight must be changed from that correct for one range when it is desired to shoot at some other range. This can be done as follows: as the same rifle is to be used, the factor for zero sighting can be eliminated and the formula, say for 25 yard shooting, can be written Elevation = .76 + 6.4 = 7.16.

For 100 yard shooting the Elevation = 3.36 + 1.6 = 4.96. The rear sight must, therefore, be lowered 7.16 — 4.96 = 2.2 minutes when going to 100 from 25 yards.

Two Guns Wanted

By GILBERT S. WATTS

DID'JA EVER take your rifle for turkeys and find them on the absentee list? Or, burdened and hog-tied with your scattergun, you see 'em feeding among the shadows clear out of shot range but sure meat for the rifle? Sure as you take your rifle you blunder into rising grouse or quail and sure as you take your shotgun you wish to high heaven you had your rifle.

Just that can and does happen, and often, all over the finest hunting country of these blessed and free shooting United States. And this means that we need another gun; especially we who have not found life quite so abundant as to include custom arms of various types. This writer hereby deposes that this-here-now gun has been a'wanting plenty long. So, when come *fini la guerre* may the makers consider and bring forth.

Wanted Gun Number One: a six and one-half pound handily balanced, fast pointing, well built, over-and-under, chambering the .22 Hornet and the twenty gauge shotshell. Yes, I know about the very fine .22-.410 combination, but this is inadequate. The .22 long rifle cartridge lacks the flat trajectory and the knockout punch needed for turkeys. And the .410 is not the gun for grouse, or even for quail, taking our shots and our relative skill, by and large, as they come.

The Hornet-Twenty should be a great combination and a thoroughly efficient tool. To this writer it would be a delight. It should be the answer to the prayers of the many hunters who have been so seduced by the delights of wing-shooting that a scattergun must be in their hands wherever and whenever there may be danger of rising birds; and who, at one and the same time, feel keenly the need of the beloved rifled tube for distantly precise and deadly performance. When the limit of birds comes too quickly, as it does occasionally, it will be grand to be able to loaf in the beeches and the oaks and pick up the makings of a squirrel pie with clean head shots.

This little charmer should be stocked like your pet sixteen or twenty gauge shotgun for quick and easy handling. It should be equipped with a square post front sight of goodly beam and, as far to the rear as possible, an aperture rear sight to be used for the most part without disc of any sort. For the kind of shooting in which this will be used the larger aperture will be preferable.

And, please, let us have two triggers, one for each barrel. A single-trigger shifting gadget on an arm of this sort would be a snare and a delusion. An unintended load of shot let off in a hurry without even dusting that gobbler 'way out there is devastating to one's conceit and wholly without effect on the game bag. On the other hand, the subconscious mind soon learns to place the finger on the appropriate one of two triggers, as every two-trigger double shotgun shooter knows.

Wanted Gun Number Two: this will be an easy order for any of the big manufacturers. It is a six and one-half pound, shotgun-feeling bolt action rifle, short-barrelled and short-actioned. Why shudder? She will be a honey for woods shooting. She may not put them all in the x-ring at a hundred yards all the time, but then, neither will a lot of woods hunting rifles. She's not intended for this. We have other rifles for gilt-edged accuracy. She may not reach across the canyon and put them down to stay. But neither is she intended for long range.

After all, many of us do not have the ability nor the need to keep them all in the x-ring. But we do yearn to be able to land our shot right quick within the x-r... of that buck tearing into the obscurity of the brush. The scoring area on him is many times larger than the hundred yard x-ring and larger, too, than the average dispersal of the shots from any well-built light rifle at ordinary ranges. In .250 Savage or in .30 Remington Rimless, if .30-30 characteristics are desired, recoil will not be too great for the weight.

Many shooters who cut their teeth on gun bolts still like bolt guns best. They don't care to confuse matters and mix familiar motions by shooting a lever action just for the sake of carrying a light woods rifle. These chaps are ready to put cash on the barrelhead whenever they can take home this light and fast bolt-action cutie, perhaps ostensibly for Ma or Sis. The girls, of course, will be mighty lucky to place a hand on this rifle at any time during the hunting season, for the "old man" will have it out in the woods most of the time.

It stands to reason, of course, that after we get these two new rifles, we will still be able to think of others we want and still be able to sell ourselves on the idea that we really need 'em badly.

Off-Season Shooting

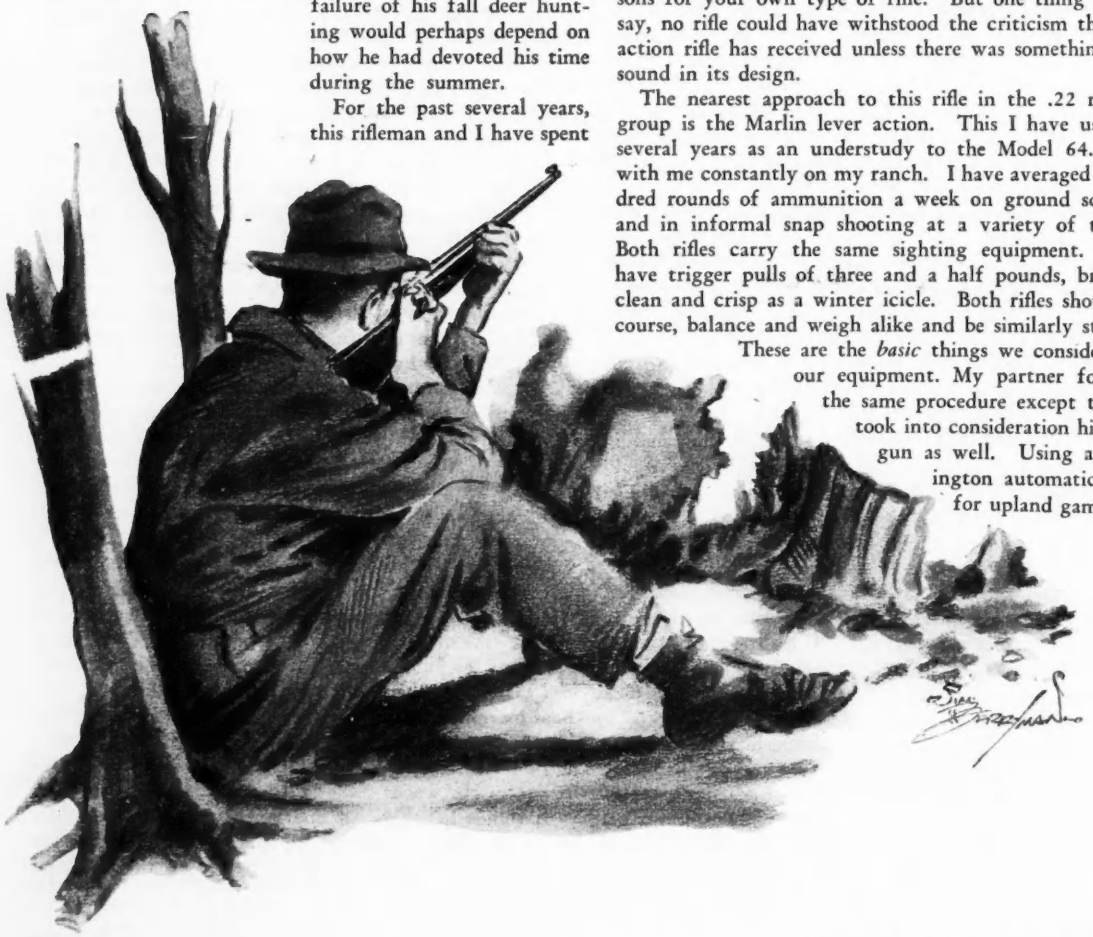
By FRANCIS E. SELL

An objective for your off-season shooting can perfect your style in your favorite form of hunting.

THE WHITE FLAG of a young buck leaped out the side of my vision, followed almost immediately by the "wham!" of my side-kick's rifle. I couldn't see the result of the shot. The brush was too dense. But the satisfied kill-cry of the successful hunter came to me across the short intervening distance. I wormed my way through a blow-down, through young stuff that constantly slapped at my eyes and tried to tear my pants off, crossed a mucky bog fringed with hide-raking briars and mounted the low ridge over which the deer had disappeared. There in a small clearing was the story.

That buck had leaped into and out of my view all in a split fraction of a second. The flush of the buck and the flash of the gun had seemed almost simultaneous—about as quick as human comprehension.

The shot broke the deer's neck at sixty yards. It was simple. It was quick. Just like that. But back of that shot there was an endless amount of practice, always with the autumn deer season in mind. All the skill he showed in taking that buck on the run was not, in the nature of things, acquired in the woods. He had shaped all his shooting toward the ultimate moment when success or failure of his fall deer hunting would perhaps depend on how he had devoted his time during the summer.



For the past several years, this rifleman and I have spent countless days during the summers practicing, perfecting and ironing out our shooting problems, making ready for autumn hunting. Our off-season game is mainly ground squirrels. This is a great sport in itself but we have subordinated it to deer hunting, for our purposes. We could have developed it along the lines of the heavy-barreled, scope-sighted, long range rifle sport, but we decided to make it pay dividends. To do this and to provide ourselves with off-season snap shooting, there were several things to take into consideration.

First was the question of rifles and sights. Starting with the theory that all our equipment should center around our deer shooting, we assembled our outfits.

My preference for a brush rifle has always been a lever action Winchester. It was only natural, therefore, that the key stone of my present equipment should be the Winchester Model 64 deer rifle. I have definite reasons for this choice just as you have equally well-chosen reasons for your own type of rifle. But one thing I must say, no rifle could have withstood the criticism the lever action rifle has received unless there was something very sound in its design.

The nearest approach to this rifle in the .22 rim-fire group is the Marlin lever action. This I have used for several years as an understudy to the Model 64. It is with me constantly on my ranch. I have averaged a hundred rounds of ammunition a week on ground squirrels and in informal snap shooting at a variety of targets. Both rifles carry the same sighting equipment. They have trigger pulls of three and a half pounds, breaking clean and crisp as a winter icicle. Both rifles should, of course, balance and weigh alike and be similarly stocked. These are the *basic* things we considered in our equipment. My partner followed the same procedure except that he took into consideration his shotgun as well. Using a Remington automatic, both for upland game and

ducks, it was only natural for him to select Remington automatic rifles.

Consider the implications of such a setup. Suppose you are an artist with a pump action shotgun. You hunt upland game birds all through the early autumn and use the same type gun in the duck blind. Isn't it sound to take all that accumulated experience into the deer covers? I believe it is. You have fired this action so much that all the mechanical details of operation have become subconscious. You have developed confidence from having become experienced and skilled in the use of your shotgun. You know just about where that pattern of shot is going to center on your flying target. If, when you took your fall deer hunt you had a Remington pump action rifle in your hands, those things would all add up to something substantial.

A deer would be a relatively slow and sure target for you. The lead might bother you a little at first but, other factors being equal, I think you would soon become an excellent snap shot. The bullet from the rifle would substitute for the nice patterns you were shooting at grouse early in the fall. The only difference would be that the shotgun pattern of three hundred odd pellets would be concentrated in the one rifle bullet.

In a case of this kind, sighting equipment and stock should approach the shotgun's as nearly as possible. A large aperture peep with a gold bead front sight is a good combination. Where the aperture is large, as it always should be for snap shooting, the rifleman is hardly conscious of it. He simply places the front sight on the point of aim, simulating shotgun shooting to an exact degree.

But suppose you go into the woods after your deer with a bolt action rifle. You have an unfamiliar piece in your hands. The action is different, the safety is different and the way the rifle comes to your shoulder will seem awkward. There is no quick changing of ingrained habits, whether they be shooting habits or others. Every move you make with the bolt gun will be, of necessity, a conscious effort. You cannot concentrate your undivided attention on your target. Under the circumstances fifty per cent of your effectiveness is lost.

This is true, of course, of any change of action. The hunter who uses a bolt action all through the summer is needlessly handicapping himself if he takes any other type of rifle into the deer woods.

It would be a happy day for the hunter rifleman if the arms companies would put out rifles in sets of three. We could very well use a low, medium and a high power weapon in shaping our shooting with the fall big game season in mind. This is true also of the bolt actions. The Winchester Model 70 can be obtained in the .30-'06 for big game. With the same stocking the .257 would make an excellent brush rifle, while the .22 Hornet could be an excellent understudy in this same model. With this combination a rifleman could take anything in the way of shooting on the North American continent, and at the same time always have a familiar rifle in his hands.

One might wish for an additional rifle in this model, having the same weight and stock, in .22 rim fire for informal target and pest shooting. Certainly my cup would be full if Winchester would put out a .22 rim fire in the Model 64 with the same stock and weight as my deer rifle. It wouldn't be such a difficult engineering feat to put a lever action in the frame of the Model 64 which would handle the .22. And the two rifles sold in combination for a deer hunting outfit could, I believe, be put on the market at slightly less cost than where the rifles were sold individually. It is a problem which the private gunsmith might consider to his profit.*

". . . our off-season game is mainly ground squirrels, a great sport in itself, but for our purposes, used as deer targets"

This matching of equipment must be followed by a similar matching of shooting. The rifleman must, if he is to obtain maximum benefit from his off-season shooting, use the rifle in the manner he will be called upon to use it in the deer covers. Finding the weak spot in his shooting, he should spend a summer shooting from that position until he has attained enough skill to make his shooting count later.

The average hunter's weak spot is the offhand position. At the same time this is the position of primary importance in woods hunting. As a matter of fact, to my way of thinking, there are only two hunting positions—standing and sitting. The kneeling position is not as steady as the sitting position and never need be used. The prone position is utterly impossible in brush hunting.

It is from these two positions that I do all my off-season shooting. Firing from woods hunting positions with hunting sights on hunting rifles shortens the effective ranges considerably. They are more in conformity with actual woods ranges. But this is unimportant. What we are striving for is to develop habits which will make automatic the mechanical details of shooting in the deer covers. We are trying to arrive at that happy circumstance where the hunter feels the rifle to be an extension of himself, handled as naturally and as effortlessly as he would use any member of his body. That is the road we must travel if we are to become expert snap shots.

If, in my own case, I feel the necessity for this constant off-season practice in order to keep in shape for the deer season, how much more necessary is this practice for the occasional hunter. I have killed in the neighborhood of ninety deer, all in short range woods shooting. Yet this amount of hunting, spread over more years than I like to think about, wouldn't of its own accord give me the skill I want without my off-season shooting.

In pest shooting I have made it a strict rule never to take any shot over fifty yards standing with my .22. Nor do I take any shots over eighty-five yards sitting with this rifle. I could perhaps lengthen this range some, but I doubt if it could be done without crippling and letting

* There is, of course, the M-65 Winchester lever action repeater for the little .218 Bee cartridge.

some of the ground squirrels get away to die suffering. I shorten the range by stalking. There is the temptation, always present I will admit, to drop into the prone position and to take the shots as they come. But I hold to my system, either getting into effective shooting range or letting the game go unscathed.

To make effective kills on game the size of ground squirrels at such ranges, one must be able to place the shot in about a three-inch circle. This must be done on a target that naturally blends with the background.

The shot should never be taken deliberately. Doing so defeats the purpose of the practice. Rather it is a quick snap shot, even though one knows there is plenty of time for a deliberate let-off. I try at all times to simulate the conditions which will obtain during the deer season. There is often a slow careful approach, then the game is put up with a quick opportunity for a shot. During the summer, all the mechanical details of handling the rifle, of getting on the target, are reduced to spontaneous and instinctive actions by constant practice.

Several years ago, while firing on the Marine rifle range in Hawaii, I witnessed a little episode which illustrates how much habit plays in all shooting. At Barber's Point where the range was located, several mangy dogs used to make a nuisance of themselves by getting into the garbage cans. Except for one man the relay had finished slow fire at five hundred yards. At this particular moment one of these dogs attempted to cross the range about three hundred and fifty yards from the butts. The range officer told the lad firing to get the cur. He fired three shots from the prone position with no results except to speed the dog up a bit. Then suddenly he sprang to his feet and rolled the dog with one beautifully placed shot.

The officer, a keen student of shooting, asked the lad why he stood up.

"That is the way we get our deer on the coast," he replied. "I just got to thinking how easy that would be if it was an old buck crossing an opening that way." He had made an excellent shot, and no doubt could do it consistently, but on the range he turned in an indifferent score. Why?

The answer I think is obvious. It was the lad's first time on the range. Those targets were strange to him, as strange perhaps as snap shooting in the woods to a target shot. The positions were different, as were the sights, and the element of excitement was lacking. Until he trains himself thoroughly in this type of shooting with this new equipment, his score will remain indifferent.

Range shooting will prepare one for woods hunting up to a certain point. There is no better method of developing confidence in one's rifle, learning its limitations as well as one's own, than firing at known distances. But the finishing off process for snap shooting must include much shooting at unknown woods ranges from the offhand position. And this can only be learned by many trips afield shooting under deer hunting conditions.

. . "three shots from the prone position only speeded the cur up a bit"

Quite often during the summer I use my deer rifle on my hunting expeditions. This lengthens the range somewhat. With my deer rifle, I extend the offhand range to about eighty yards, never more. In the sitting position, I take all the shots from eighty to a hundred and twenty yards. Those ranges will seem comparatively short to the woodchuck hunter who has a specialized outfit. But if he will try them with his hunting rifle, taking the shots as they come, he will acquire a wholesome respect for snap shooting. It is a difficult art and one not learned in a day or a month.

Range-Finding

(*Continued from page* 13)

single eyepiece or one-eyed instruments. That is, there is but a single eyepiece to look through, like a telescope. However, on some instruments the other eye may simultaneously see the range scale.

There are also stereoscopic range finders in which the observer uses both eyes to examine the image. These present perhaps a clearer image in which the range is indicated by a series of numbered marks which seem to extend away from the observer into the distance. The mark apparently nearest the target gives the range.

This type of finder has a serious fault in actual practice. They depend for accuracy upon the observer's two eyes remaining in good coordination with each other. Experiments have shown that under the effect of shock, excitement, toxic conditions, etc., the two eyes may tend to turn in toward each other, or away from each other, or even deviate vertically.

The actual splitting or duplicating of the image is done by a prism placed in the optical system of the eyepiece section of the range finder. The beam of light proceeding from the right and left hand objectives strikes the dividing prism in such a manner that the portions of either right or left images desired may be properly presented. By adjusting the various controls embodied in the instrument, the images can be perfectly halved showing only an extremely fine dividing line.

Large range finders may also embody a separate aiming scope by means of which the range finder is first pointed at the target. This is similar to the practice in connection with astronomical telescopes which are so high in magnification and so narrow in field of view that a small telescope is mounted on top of them merely for the purpose of first finding and aiming at a certain star.

(To Be Continued)

KILLING POWER

A COMPREHENSIVE STUDY OF SMALL ARMS PROJECTILES AND THEIR EFFECT ON MAMMALS

By E. BADEN POWELL

PART II

Hydraulic transmission carries the energy imparted to it by two physical means, i.e., conduction and convection. The former is similar to the transmission of sound, earthquake waves and other forms of energy which pass through solids, liquids and gasses without displacing the medium through which they pass. The latter can be duplicated by applying a similar amount of pressure during a similar amount of time to the abdominal cavity (viscera) of an animal by any other mechanical means.

This is due to the very nature of the primary cause of so-called high velocity, secondary missile fluid effect or high velocity shock effect, which is dependent upon the synchronization of a combination of factors and events, i.e., a missile so constructed that at the velocity it is travelling it will expand sufficiently to expend its entire energy instantaneously upon impact, and before it has penetrated much deeper than through the outer skin and flesh.

Such a missile, under such conditions, virtually explodes. If this "explosion" takes place in fluid such as large arteries, or in the liver, kidneys or other viscera, it acts similar to an explosion of dynamite in water, momentarily increasing the pressure throughout the entire hydraulic system. Such fluid is practically incompressible, and transmits a considerable amount of the missile's energy to the vital cells of the body. This is the principle which makes depth charges and near miss bombs collapse submarines and ships.

The transmission of this energy, however, *must* be at a certain minimum rate in order to injure the vitals sufficiently to cause death quickly. From experiments and observations made by the writer, on both animate and inanimate subjects, it appears to require about 163 foot pounds of energy per pound of fluid in the animal's connected hydraulic system in 1/3500th seconds time to accomplish this. Experiments with tomatoes, cereals and other "fluids" in sealed cans of one pound (pint) to forty pounds (five gallons) shot into with bullets of different caliber and type, at striking velocities from 500 f.s. to 3500 f.s., bear out the ratio of 163 to 1 per 1/3500th second about as closely as the ratio of animal weights normally possessing these quantities of fluids that are humanely killed by hydraulic transmitted shock.

This means that a bullet travelling at 600 f.s. when it strikes, must be stopped by the fluid in the time it takes the bullet to penetrate about one inch. Such a bullet would be a soft lead, large cavity, hollow-point wadcutter. At 3500 f.s. striking velocity, a bullet can penetrate only about six inches in 1/3500th second.

A bullet may possess twice as much energy as another at the same velocity and yet produce less hydraulic transmitted shock because it is constructed to penetrate more than twice as deep before being arrested by the resistance of the fluid. In other words, while it transmitted twice as much energy to the fluid, it required more than twice as long to transmit it and, therefore, at no time period did it set up as great a "pressure" and "shock" throughout the hydraulic system. Hence, the *time* that a missile requires to impart its energy to the surrounding fluid must be considered.

If the same amount of energy is imparted to a fluid in one-half the time, twice the pressure will be created in the fluid during the briefer time interval, and twice the force will be transmitted to any fluid particles set in motion during the shorter period of time. Twice the pressure may be the difference between the blood vessels in the brain holding or rupturing violently, and the difference between the so-called phenomenal high velocity shock effect and the ordinary killing power of a projectile.

An example is the .220 Swift with 48-grain, factory expanding bullet at 4140 f.s. m.v. This bullet produces hydraulic transmitted shock effect on gut-shot animals weighing up to about 80 pounds at 100 yards, and on animals weighing up to about 50 pounds at 200 yards, but cannot be depended upon to kill instantly animals weighing more than 10 to 15 pounds when gut shot at 300 yards. This is because at 300 yards the bullet is travelling at a speed slow enough to allow it to hold together and to penetrate deeply due to less resistance of the "fluid" tissue.

It is also true that hydraulic transmitted shock effect is sometimes observed in animals shot in the thorax (chest cavity), although usually only when the higher powered bullets at high speed blow up in the organs of comparatively small game. In either case the thorax or viscera and the surrounding flesh is a mass of nauseating, inedible, coagulated, bloody tissue.

Hydraulic transmission gives small, high-speed bullets killing power all out of proportion to that of the same sized bullets at velocities below that at which they explode upon impact with fluid. The peak of efficiency in hydraulic transmission appears to reach unity in soft-point bullets weighing about 50 grains at 3500 f.s. striking velocity. At this velocity expanding bullets of this weight are likely to kill heavier animals when shot in the viscera than when shot in the head, because the bullets are so explosive that they may blow up on the bones of the head or spine and fail to penetrate the brain or ganglia on animals of that weight.

On the other hand, larger and heavier bullets require still higher velocities to reach unity compared with their killing power on head or chest shots, because these larger, heavier bullets have the ability to destroy more than proportionate quantities of tissue and to inflict more than proportionate degrees of injury by their larger wounds and greater nerve transmitted shock while expending the same amount of kinetic, or foot pounds of energy.

There comes a place then, where the larger, heavier

bullet possessing the same energy will kill a heavier animal by the large, deep-wounding destruction of tissue and nerve transmitted shock when struck in the *viscera*, than it will kill by hydraulic transmitted shock. This stage is reached by bullets of about 150 grains when the striking velocity has dropped to around 2700 f.s. Heavier bullets at lower velocities still produce hydraulic transmitted shock but their killing power, due to wound size and nerve transmitted shock, becomes more than proportionately greater the lower the striking velocity.

Summarizing, we observe that light bullets at highest striking velocities produce greatest killing power per grain of bullet weight by *hydraulic transmitted shock*. Heavy, slow-speed bullets produce far greater killing power per foot pound of energy expended by *nerve transmitted shock*, or hemorrhage, than the light bullets do by any means. If the light explosive bullet hits a heavy bone or tough muscle upon striking an animal, it will blow up without penetrating to the fluid area and the animal may live for days thereafter.

Ruminants, a class of grass-eating animals that chew their "cuds" and possess several "stomachs", carry as much as fifteen per cent of their weight in blood, food and other fluids in their systems, while carnivorous, or meat-eating animals carry as little as five per cent of their weight in fluids. Omniverous animals that eat mixed foods, such as hogs, usually carry about ten per cent of their weight as fluids.

Many hunters speak of deer as being more susceptible to shock when gut-shot than animals of the cat tribe, for instance. In reality it is because the viscera of deer are more apt to be filled with fluid and afford a better hydraulic transmission system through which to carry the bullet's power to the brain and other vitals than the viscera of a jaguar or leopard of the same weight. Ruminants gorge themselves with large quantities of grass and water daily, while carnivores are gaunt and hungry most of the time. When they do eat and drink, they consume lesser quantities in bulk compared to ruminants of the same weight. Therefore, the chance of striking a connected hydraulic system in a carnivore is less than in a ruminant.

When animals possessing large intestines are gut-shot, proportionately greater energy, instantly expended, is required to set up the momentum in, and overcome the resistance of, the comparatively larger quantities of intervening fluid, and create "high velocity secondary missile fluid effect", and pressure to the brain or other vitals.

The foregoing analysis reveals why doubling the muzzle velocity of any projectile does not give it four times the killing power. It usually increases by less than twice, the maximum weight animal it will kill as quickly at any average game-shooting range when struck in the same part of the body under circumstances not conducive to hydraulic transmitted shock. This has been demonstrated on hundreds of thousands of animals, observed by experienced hunters the world over. It explains some of the reasons for the unpredictable and erratic effects of light, high energy, high velocity explosive bullets on game under differing conditions, about which probably more arguments have ensued than have been caused by all other gun problems in recent years. It tends to prove that a missile's energy, as expressed in foot pounds, is not always a proportionate measure of the animal weight it is capable of killing under practical hunting conditions.

A few hundred feet per second difference in velocity is often the difference between missiles holding together for deep penetration, or blowing up on impact. This, after all, is the basic cause of hydraulic transmitted shock. At velocities as low as 300 to 600 f.s., wood and cane will hold together even when objects as hard as wood and bone are struck. The whirling air reaches velocities of up to 400 m.p.h. (590 f.s.) in the centers of tornadoes, and grain straws have been found sticking like arrows in wooden "line" poles and buildings which they had penetrated an inch or so.

A three-quarter ounce arrow, thirty inches long and about one-third of an inch in diameter, can be shot at a velocity of 250 f.s. from a bow of 60 pounds pull through a two-inch piece of pine without breaking. Animals weighing from 200 to 1700 pounds (deer, lion, bear, moose, bison, etc.) have been shot clear through, time and again, with sharp-edged, .35 to .50 caliber, metal-tipped arrows, weighing from one to two and one-half ounces (440 to 1100 grains) shot from bows of 75 to 120 pounds pull at velocities of 275 to 350 f.s., without breaking the arrows.

Even the old black-powder "express" rifles produced some hydraulic transmitted shock effect sixty years ago when their large, soft, flat-nosed, hollow-point bullets at

"I am fully aware of the fact that medical authorities are in wide disagreement concerning the cause of death by violence and the effect of various wounds. This was first brought to my attention by the former Chief Surgeon of the Canadian Pacific Railway in 1921, after his return from being in charge of one of the large base hospitals in France during the last World War. Doctor McLean and I were discussing hunting experiences while fellow passengers en route from Mexico, where I had just completed an extended field expedition. His contentions regarding the "seat of life" and effects of wounds by violence through his experience with train wrecks and war in Europe started me thinking and investigating along these lines, and comparing his views with what I had seen in the killing of hundreds of animals.

One should realize that a poor analogy exists between the effect of wounds inflicted on men by military rifle bullets and that on animals by expanding sporting bullets. In the first case a small amount of the bullet's energy, and consequent small amount of shock, is imparted while passing through a man's body unless heavy bone is encountered. The victim usually is in a physiological and psychological state of mind and body to best minimize the effect of wounds, while unless previously aroused, animals are not, and the same bullet in sporting type, constituted to deliver its entire energy to an animal of the same weight as a man, where no attempt is made thereafter to save the animal's life, produces an effect in no way comparable.

The very fact that such disagreement and mystery exists on the subject is the greatest justification and need of my formulae, and the principal reason for the stand which I have taken in regard thereto, because it is not at all important as to who is right or wrong about the effect of wounds that sometimes kill and sometimes don't, but rather that the shooter is afforded ample power to inflict a wound of sufficient magnitude to assure certain death humanely every time. In other words, I am not concerned in the least about the maximum killing power of a wound, but only in its *minimum* killing power in animal size."—THE AUTHOR.

express velocities of 1400 and 1600 f.s. ruptured upon impact with the rib bones of fairly large sized game. But the solid lead, round nosed, hard alloy slugs so effective in chest shots on heavy animals, slipped through the intestines of deer, allowing them to travel miles before dying.

Projectiles that hold together and penetrate deeply expend their energy during a longer period of time, and distribute it throughout a greater volume of space, causing death by nerve transmitted shock and/or hemorrhage. But they do not cause as much hydraulic transmitted shock as high-speed explosive type projectiles, unless comparatively great power is used on relatively small animals. They do possess a dependable ratio of animal-weight killing power to bullet weight and velocity that is far more predictable.

Going to the other extreme, heavy-jacketed, solid point projectiles pass through soft animal tissue without expending much energy. They, therefore, have low hydraulic transmitted shock effect, and low nerve transmitted shock killing power on soft-skinned animals, unless brain shot. Their province is heavy, tough animal bodies, such as rhinos, elephants, hippos, etc., for head or spine shots.

Hunters of mediocre marksmanship should confine themselves to the use of bullets with sufficient power to kill effectively when placed in the thorax (chest cavity) under average game shooting conditions and distances. Bullets so placed require ability to destroy considerably greater quantities of tissue than when placed in the spine or brain. Because the nerve tissue is less concentrated, more living cells must be destroyed in order to send sufficient shock to the brain to knock the animal out long enough to cause suffocation. However, the vulnerable area of the chest cavity offers a much larger and easier target to hit, and correspondingly increases the practical range for accuracy. Likewise, hunters of limited experience, which includes about nine-tenths of all shooters, should use bullets of sufficient power to kill quickly even when an animal is struck in the viscera in such a manner as to fail to cause the hydraulic transmitted shock effect.

Bullets that will kill quickly animals struck in the thorax by the combination of shock and hemorrhage suffocation, are not sufficiently powerful to kill the same weight animal as quickly when struck in bone cells (hips, etc.), or in the viscera at velocities below that required to cause the hydraulic transmitted shock effect. Much more powerful bullets are required. Hi-speed explosive bullets that cause hydraulic transmitted shock are humane killers on vermin but if first-class edible meat or salable furs are wanted, other type bullets should be used.

It has been opined that the striking velocity alone was responsible for the asserted super killing power of the Swift class of loads, even if solid non-expanding bullets were used. First off, most all of these claims were based on the use of factory loads. The fact is, no factory loads in the muzzle velocity bracket above 3200 f.s. in any .22 or .25 caliber has any more remaining velocity around the 300 yard ranges at which many of these phenomenal kills are reported than standard factory .30-'06 loads at the same distance. Factory-loaded .270 and .300 Magnum bullets are travelling about as fast at 400 yards as most of the *special* .22 and .25 caliber "wildcat" handloads with fancy "S" head bullets. This is because even the finest forms so far developed in these small caliber bullets are handicapped by low sectional density and low ballistic coefficients compared to regular factory .270 and .300 caliber bullets. Also the factory bullets are all the expanding type in the high velocity loads of .22 and .25 caliber.

Tests with 35 to 40-grain Sisk .22 caliber, solid metal-cased bullets at high velocities, but below that at which they explode on small animals such as ground squirrels, jack rabbits, coyotes and wildcats, resulted in about the same killing effect when gut-shot from the side at 50 to 75 yards, as the use of .30 caliber 150-grain M2, and 173-grain M1 bullets at 2200 f.s., 2700 f.s., 3000 f.s., 3300 and 3500 f.s. m.v., fired at close range, and .45 caliber metal-cased automatic pistol bullets at 800 f.s. and .22 long rifle, solid lead bullets at 1100 f.s. However, even the larger bullets would only cause the animals to hump or arch their backs, or go down for a few seconds in many instances, then crawl to their holes or run away.

Under the same circumstances and distances the .22 long rifle, high-speed, hollow-point is a much surer and more humane killer. Of course, bone or chest shots produce different results, sometimes "tumbling" spitzer bullets, and often proving good killers, although never as humane and uniform as proper expanding types.

Unfortunately for wild game animals, much of the vaunted killing power of light, small caliber bullets on heavy animals has been based on killing domesticated species at close ranges where the striking velocities have been above 3500 f.s. But 3500 is the limit of velocity so far attained in all factory and practical handloads at ranges beyond 100 yards, except for a very few wildcat Magnums. Such bullets possess as little as half or a third of the efficiency to penetrate the atmosphere as bullets of two or three times their weight, hence, retain only a fraction of this great killing power out at the distances at which their accuracy is still ample to hit large animals. (To be continued.)

Radar, the Military Marvel

The electron-tube marvel, Radar (radio detecting and ranging), has been defined in general terms by the War Department as devices used to detect approach of enemy aircraft and ships and to determine range to enemies' forces. It also is used by the ground defenses to provide data for antiaircraft guns in smashing Axis planes through cloud cover, and by aircraft and warships. Ultra high-frequency waves traveling at speed of light (186,000 miles a second) are focused, scan air or sea, strike enemy ship or plane, bounce back, and minute time interval is measured, giving distance. Radar works in fog, storms, or darkness and hence is superior to telescopes and acoustic listening devices.—From *Army Ordnance Association Bulletin.*

The Home Workshop

Rifle Restocking

By JAMES FEERICK

ALTHOUGH THE SUBJECT of "stock-making" has been covered by many writers, there remained certain phases of the business which I have had to discover for myself. It is, therefore, my purpose to cover these findings along with other tricks of the trade in the form of a complete procedure in the design and inletting of bolt action rifle stocks, in the hope that they will be helpful to others.

Assuming that we have a stock blank of the proper type, carefully selected for grain and properly seasoned, let us get right to work on it.

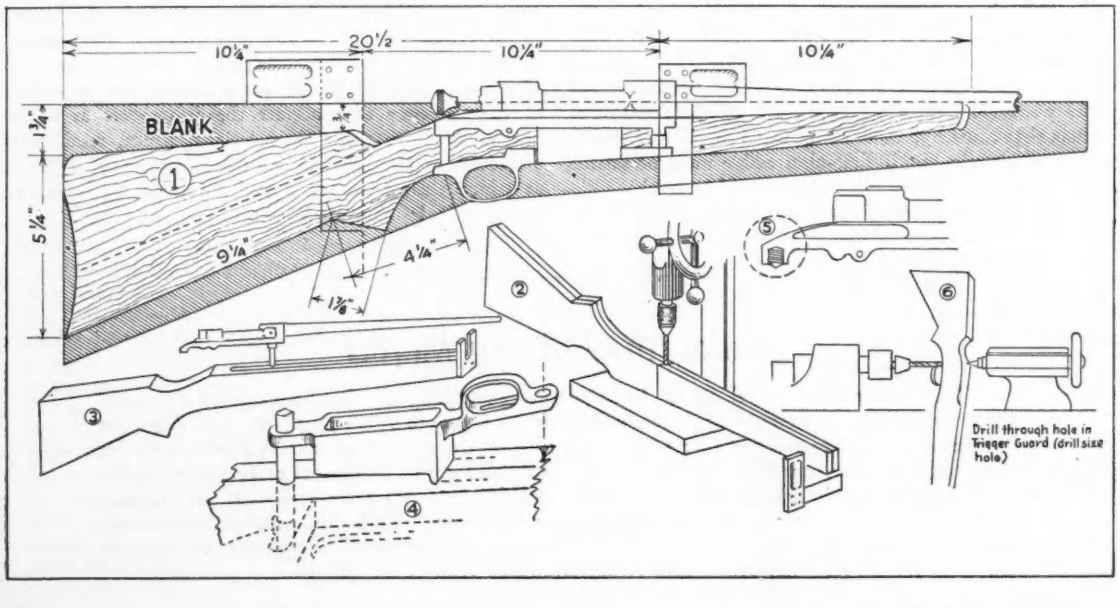
Before any actual layout of the design can be attempted, the top edge and one side of the blank must be surfaced, being sure the edge is perfectly straight and at right angles to the surfaced side. Now measure forward 10¼ inches from the corner, representing the heel of the blank and make a mark. From this point again measure 10¼ inches forward and make another mark. Once again measure 10¼ inches forward. This point represents the forend tip. Sawing on this line leaves a blank 30¾ inches long.

Now slide a square along the top edge until its blade intersects the first 10¼ inch mark and draw a line across the surfaced side. Repeat this procedure on the second 10¼ inch point and our blank is now equally divided into three parts. The 10¼ inch line near the heel serves to locate the position of the comb peak and the center of the pistol grip while the second 10¼ inch line locates the position of the front guard screw hole.

We now lay the action with trigger guard, bolt and barrel attached on the surfaced side so the front guard screw is directly over the second 10¼ inch line, with the axis of the bore and the center of the firing pin (cocking-piece) directly over the top edge of the blank, (Fig. 1). Then, without disturbing its position trace around the upper tang, trigger guard and magazine, being careful to mark the position of the rear guard screw head as this is important for laying-out purposes. The action assembly is then removed and we proceed with laying out our design before we have the contour band-sawed. If the contour around the magazine is *just a little* full, much work will be saved in sinking the magazine as is not the usual case when the blank is left extra full at this point.

We measure down from the top edge at the heel 1¾ inches and mark on the surfaced side. This will be the "heel" of the stock. Next measure down ¾ inches from the top edge along the first 10¼ inch line and mark again. This will be the "peak" of the comb. Now, connect these two points with a straight line. Next, measure from the mark representing the heel of the stock towards the toe 5¼ inches and mark. This represents the "toe" of the stock. Connect this point in a *straight* line with the mark made for the rear guard screw head.

As previously said, the first 10¼ inch line represents the center of the pistol grip. This should now be drawn in so its rear edge (pistol grip—1⅞ inches long) coincides with the line just drawn from the toe to the guard screw. A curved line is then drawn from the guard screw head to meet the front edge of the pistol grip. The angle formed between the front and bottom edges should be 90 degrees. Another line drawn from the upper tang tracemark parallels the pistol grip curve to a point where the comb is formed. A line from the magazine to the



forend completes the layout and the blank should then be band-sawed.

A centering line is then scribed around the entire edge of the stock 1 inch from the surfaced side. This line serves to center all fittings and it assists in inletting the action and magazine to assure the proper relation of these parts. A square is then placed on the surfaced side of the blank at the second 10¼ inch mark and a line is drawn around the stock at this point. Where this line intersects the center line on the bottom edge, center punch sufficiently so a drill will start properly. Then place the blank top side down on a table, Fig. 2, and drill a ¼ inch hole through the stock at this point.

A guide pin is then made up to screw into the action front screw hole. This is to fit in the hole just previously drilled as it serves to bring the action into exact position for fitting into the stock. A "U" shaped guide is made of wood or metal to be fastened to the forend tip. This serves the same purpose for the muzzle end as the guide pin.

Place the action on the blank so the guide pin enters the hole just drilled (Fig. 3) and the barrel rests in the forend guide. Then, with a sharp scribe, trace around the recoil lug of the receiver, being careful that the scribe particularly hugs the rear of this recoil lug. This portion of the stock will take up all the recoil and the recoil lug must bear properly against it. When this line is scribed, also scribe around the entire action and barrel.

With a curved plane or an offset gouge, the barrel channel can be roughed out. Then using a flat chisel the "well" for the recoil lug is formed. Remember that the rear of this lug *only* must bear. The other dimensions of this "well" can be oversize. As the action is tried for fit, lamp-black and oil (any light oil to form a thin paste) should be applied to the entire bottom surfaces of the action and barrel with a brush. The marks that appear on the stock when the action is removed show where the action is touching and these places should be carefully removed with chisels of convenient size and shape. As the work progresses, "rifflers" will assist in the final cuts and assure a more perfect fit. When the action and barrel are completely inletted, bind together with "C" clamp or rawhide thong and clamp in vise, top side down.

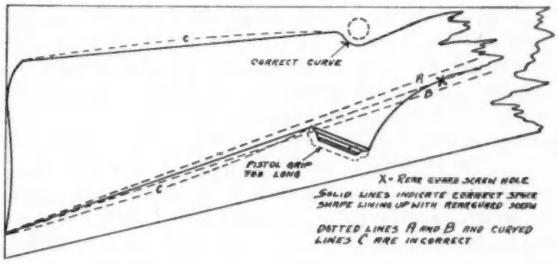
The trigger guard is then placed over the protruding guide pin (Fig. 4) and the center of the rear wall of the magazine is placed over the center line by sighting through the rear guard screw hole. A line is then traced around the magazine box. Use a drill press to remove the surplus wood of the magazine well. Rasp and chisels should then be used to inlet the magazine so the tangs will just bear against the stock. The tangs are then traced and inletted. This job is finished when the top edges of the magazine box bear against the receiver. We are then ready to drill a series of holes for the trigger and inlet it with the sear.

We now prepare to drill the rear guard screw hole. This is done as follows: Make up a centering stud or cut down a trigger guard screw (if an extra one is available) and form to a point (Fig. 5). Only the point should protrude beyond the tang so an imprint is made when the action is placed in the stock and the tang is "lightly"

A beautiful sample of the stock makers art is this full length Mannlicher stock.

tapped. Deepen this imprint with a center punch. We then select a drill that will fit snugly in the hole of the guard. Place the trigger guard in the stock and, with the drill in the lathe chuck, the tail center in center punch mark (Fig. 6) feed the tail stock until the drill comes into contact with the tail center. A turn or two by hand will be necessary with the tail center removed to complete the hole.

The butt-plate, grip cap and holes for the sling swivel are then installed using the center line as a guide. We are then ready to shape the exterior. A swivel jaw, swivel base vise is desirable for this. Use a draw-knife or a gouge across the grain to remove the surplus wood. Follow with a coarse and then a smoother rasp to obtain the final shape. All marks are then removed by various files and sandpaper. For the final polish use fine steel wool and then pumice stone. When the stock fairly shines, linseed oil is applied. I can add nothing to what has already been written many times on the subject of oiling.


CORRECT CURVE
PISTOL GRIP TOO LONG
X- REAR GUARD SCREW HOLE
SOLID LINES INDICATE CORRECT STOCK SHAPE LINING UP WITH REMOVED WOOD
DOTTED LINES A AND B AND CURVED LINES C ARE INCORRECT

The dimensions mentioned herein will result in an average stock length of 13½ inches. These dimensions will also be the same for all military model rifles and commercial models, such as—Mauser, Springfield, Enfield, Remington 30, Winchester Model 70, Winchester Model 54, etc.

For such shortened models (as the accompanying photo) the amount the action is shortened should be subtracted from the distance between the first and the second 10¼ inch lines for the location of the front guard screw hole.

A word or two on the "common errors" of stock design may be in order. (See cut.)

1. The top and bottom lines forming the butt-stock should be straight and not curved.

2. The "pistol grip" should not extend below the bottom line of the stock.

3. The curve forming the comb should be in the form of a half circle and not an abrupt angle.

4. The bottom line of the stock should intersect with the rear guard screw head.

5. The size of the stock just rear of the grip should not be thinned to form the grip, checkering should be relied on for this purpose.

6. A common practice on stocks of foreign make is to position the "pistol grip" and "comb" higher in relation to stocks of our conventional design; although the heel and toe drop remain the same as ours. This in turn gives a stock a very crooked appearance. The various illustrations along with this text show numerous little pointers of a helpful nature to the reader.

Trigger Pull Improvements

THE WINCHESTER 52

OWNERS OF THE OLDER Winchester Model 52, slow lock, rifles who may envy their brethren with later models equipped with improved trigger mechanisms need not do so if they have a few necessary tools and some mechanical ability.

An examination of the action of a slow lock 52 will disclose a projecting tip on the forward portion of the trigger forging which contacts the underside of the sear and acts as a forward movement trigger stop. An adjusting screw installed through this tip will function to take up the preliminary pull and set the sear engagement to effect a very short and crisp let-off. The following procedure has proved successful.

Dismantle the action and test the tip of the trigger forging with a file to determine if it will require annealing. Some do and some do not. The tip must be reasonably soft to allow drilling and tapping operations to follow. If annealing is required, proceed carefully and protect remainder of the trigger as much as possible.

Drill and tap for a small 4-36 x ¼ inch Fillister Head iron machine screw, leaving only a web of material between hole and forward end of the tip. Cut through the remaining web with a hacksaw and squeeze the sides in a vise or peen with a hammer to partly close slit and make screw friction tight in tapped hole. Leave screw just barely above surface and file or stone the end smooth.

Examine the engaging surface of the sear for wear. If wear is apparent, "polish out" with a hard Arkansas stone, retaining the same angle as the factory honing. Clean action parts thoroughly, oil and reassemble.

Cock action and carefully turn adjusting screw with a screw driver held in one hand while testing trigger for "slack" with a finger of the other hand. When preliminary pull is all taken up, the sear engagement is rather shallow so adjustments beyond this point should be made with care to guard against release of the striker when turning safety from ON to OFF position. Cock and "dry fire" several times and also jar action and operate safety to determine if action stays cocked positively.

When satisfactorily adjusted and tested, re-install in stock. The results should be gratifying.

THE COLT WOODSMAN

An aid to better shooting with the Colt Woodsman will be found in a method of limiting trigger travel to just that amount necessary to disengage the sear.

After removal of the stocks and the side plate, an examination of the upper part of the trigger forging will disclose that it is shaped roughly like the figure 8. A simple trigger stop consists of a short piece of round rod of suitable size loosely held between the side of the trigger niche and the "V" groove in the forward side of the figure 8 portion of the trigger.

For maximum effectiveness, the size of rod must be such that the "piece" will be clamped snugly into the "V" when the trigger disengages the sear.

Proceed as follows: Drive the trigger pivot through from reverse side far enough to disengage the ears from the frame. Turn the pivot 180 degrees so that the flattened portion comes to the top and then drive it back in place temporarily. With the trigger pivot in this position it will allow the insertion of rods of different sizes for trial as the selection must be by the "trial and error" method. Micrometers, if available, will prove helpful in selecting rods in the range of sizes suitable. A rod of .093 inch was found satisfactory for the only job to date. Twist drill shanks and nails afford material but should be square cut at the ends, free from burs and any irregularities in diameter. When a piece of the right size is selected after thoroughly testing by "dry firing," cut off a length of ⅛ inch to 3/16 inch, coat with hard grease and drop it in place. The stop should eliminate approximately one half the over-all trigger travel. Restore trigger pivot to normal position and reassemble the arm.

For further refinement, practically all of the "slack" may be eliminated from the Woodsman trigger pull by peening the top portion of the sear to lengthen it where it is engaged by the trigger bar.

Another refinement consists of increasing the radius of the curvature of the trigger following the lines of the M. T. Woodsman. This is best accomplished by annealing the trigger below the pivot hole, reshaping to suit, then cutting to the required length to clear the trigger guard.

NOTE: See also suggestions on Woodsman improvements by Walter F. Roper in the April, 1941, RIFLEMAN.

ANOTHER TRIGGER STOP

I have noticed different ideas for a trigger stop in THE AMERICAN RIFLEMAN and would like to add the type I use on my rifles. It is merely a thin ¼-inch strip of tin reaching from the rear end of the trigger guard to the back edge of the trigger. This piece of metal is clamped between the trigger guard and stock using the rear guard screw to hold it in position. The stop can be bent up towards the stock when the trigger must be pulled all the way back to remove the bolt.

Coated Lenses

By FLOYD E. DAY

AT THE PRESENT TIME, and probably for some time after the war, it will be almost impossible to get telescopes of high quality, cameras and other optical instruments because of shortages of the better glass and limitations on manufacturing. However, nearly all of the optical instruments having glass to air surfaces may be greatly improved by a process known as treating or coating the surfaces.

The object of coating the surface is to reduce the surface reflection of light. While a coating will not stop all of the reflection, it helps a great deal especially in a complicated lens with many surfaces as each treated glass surface in an optical system adds to the efficiency of the instrument.

The treatment of glass surfaces to decrease light reflection was first successfully developed by Dr. John Strong in 1935 and 1936 at the California Institute of Technology, the coating taking place in a high vacuum. Since that time many experimenters have been working on lens coating and some new methods have been developed.

In the two given figures, which were published by an optical concern doing this type of lens treating, Fig. 3 shows the light lost by reflection through an ordinary lens system. Each glass surface reflects about four per cent of the light passing through. Fig. 4 indicates the loss in another lens which is designed for better optical results but this system has more light reflection, about five per cent per surface.

Some methods of treating surfaces are more efficient in cutting down light reflections than others. The best lens coating is not always the most durable and some that are more durable are not always the most efficient. For this reason most concerns select a method which will give as much durability as possible without sacrificing too much efficiency.

In any camera with several glass to air surfaces, the reflected light finds its way to the film, not as useful light but as stray light and glare. This causes fog and impairs contrast and brilliancy. However, if the glass surfaces in a camera have been properly treated, the surface reflections are cut down, the fog eliminated and the lens speed is increased almost one stop. If the lens can be stopped down, using the same shutter speed, the result is more depth, contrast and clarity of detail. If the lens is not stopped down the shutter speed may be increased. An illustration of the quality obtainable is the motion picture, Citizen Kane. This picture was filmed with a coated lens system and a stopped down lens. The improvement over the usual production is easy to see as film is more sensitive to light conditions than the eye.

In a good telescopic gun sight the same optical conditions are found. The telescope usually has even more glass to air surfaces and the improvement derived from coating is greater but perhaps not as easily recognized.

We checked two hunting telescopes of the same manufacture and power, one treated and the other standard. In poor light, such as occurs when the sun shines from a low angle on the eyepiece lens, it was found that in the untreated telescope not much detail could be seen in shaded areas. On the other hand, the treated telescope showed the object more clearly and detail could be recognized.

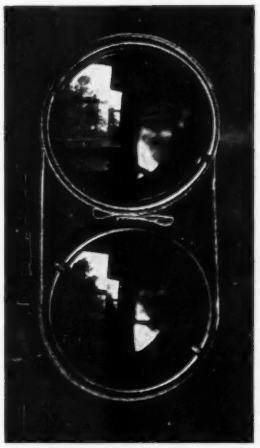


Fig. 1. (above) shows to some extent the bothersome reflection on the ocular lens of an untreated hunting telescope

Fig. 2. (below) shows that the reflections are cut down in a treated telescope even though outside surface is not coated

In better grade telescopes of achromatic design there is more light reflection than in some of the poorer designs. This is caused by the dense flint glass which reflects more light than some of the other types of glass. Therefore, treatment of this type gives fine results.

A good lens coating will last for years if well cared for. Because oil will neutralize the coating, outside surfaces must be protected from oily dust and fingerprints.

One may assume that the average shooter uses a telescope to see targets and game more clearly. Treated lenses give the shooter just a little advantage, possibly just what he needs to shoot a better score or to get that game in a better spot. It will pay dividends.

Fig. 3. Shows light lost by reflection through ordinary lens.

Fig. 4. A better optical system shows more light reflection.

Simplified Small Arms Ballistics

FOR THE SPORTSMAN AND SOLDIER

By the OLD COACH

Since its inception, the Old Coach's Corner has been given over to a review of shooting subjects for old and new shooter alike. One of the most important subjects is that of ballistics, an understanding of which, we must admit, is too often taken for granted. To provide the necessary background and to establish basic principles and fundamentals, the Old Coach undertakes this series; presented in simple terms, yet invaluable in review for all RIFLEMAN *readers.*

THE BORE AND THE BULLET

A GUN IS ANY WEAPON designed to expel a projectile (or projectiles) through a tube (gun barrel) which directs the projectile (bullet) toward the target.

The kinds of guns with which we are concerned are *firearms*—so called because their bullets are expelled from the gun barrel as the result of the *burning* of gun powder. The expression "firing a gun" is just as truthful today as it was when the powder was set afire by the touching of a match to the priming hole even though we no longer *see* the fire lighted inside the cartridge case.

To simplify our discussion as much as possible, we will limit ourselves to *small arms* ballistics. For our purposes small arms are firearms of such size that the gun and a reasonable quantity of ammunition can be conveniently carried and used by one man.

Modern small arms use *fixed ammunition*, i.e., ammunition which is put up in convenient "package" form with the bullet, powder and primer all assembled into a cartridge case ready to be loaded into the gun and fired.

So, we are going to discuss small arms ballistics using fixed ammunition. Such arms fall into two general groups —smooth bores (shotguns and muskets) and rifled arms (rifles, carbines, pistols and revolvers). Round balls projected from a smooth bore barrel have a dispersion under favorable conditions of about 40 minutes of angle, that is, at 100 yards a number of balls fired with the same aim would be dispersed over a circle about 40 inches in diameter. A round ball quickly loses its velocity of flight due to the resistance of the air, and soon falls to the ground. Therefore, a smooth-bored gun is a relatively short-range weapon. Fifty yards is about the longest distance at which a charge of small shot will be effective against birds, and 100 yards is about the maximum sure hitting distance for larger balls or a single ball against a target as large as a man.

Rifled arms, on the other hand, will deliver their projectiles accurately to great distances. The study of *why* this is so is the study of ballistics. Here we go!

Modern small arms rifling usually consists of four to eight grooves cut equidistantly around the circumference of the bore; although the British Service Rifle, produced in 1942 and later, has only two grooves. The grooves are cut to a depth of .002 to .005 of an inch. The rifling makes one complete turn in 8 inches to 36 inches depending on the ballistic requirements. The original surfaces of the bore left standing between the grooves are termed the *lands*. The diameter of the original bore before it is rifled is called *bore diameter* or *land diameter* (see Fig. 1). The distance from the bottom of one groove to the bottom of the opposite groove is known as the *groove diameter*. These diameters, in the United States and England, are designated in hundredths or thousandths of an inch, and on the continent of Europe in millimeters. Generally speaking, the *caliber* of a rifle is its bore diameter; although this is not always strictly true. Thus, a caliber .30 rifle is one that has a bore diameter of .300 inch, and if it be rifled with grooves .004 of an inch deep, then the groove diameter will be .308 inch.

As a boy you played at spinning tops. Most modern Americans have read a great deal about gyroscopes and gyrostats, and how they are used to stabilize everything from ocean liners to robot pilots. When a top is spun just right, it will spin straight up and on one spot on the floor. It appears to "go to sleep." The ballistic engineer would say, "it has *gyrostatic stability*." If it is spun too fast it will wobble a bit until the speed of rotation has fallen off to the proper rate, when it will "go to sleep" until its speed of rotation falls too low, when it again begins to wobble and finally falls over.

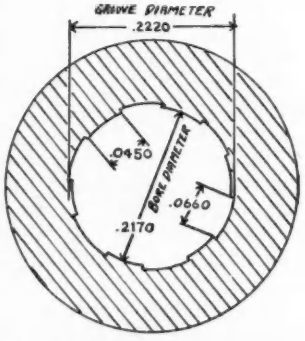


Fig. 1. Cross-section of a modern rifle barrel with details of the bore.

Now if we fire a snugly-fitting bullet through a spirally grooved (rifled) barrel, the bullet will emerge from the muzzle spinning like a top. It will continue to spin with gradually decreasing energy until it strikes the target or ground.

The performance of a spinning bullet is exactly the same as that of the top or any other gyrostat. If the twist of rifling be just right and if other conditions are correct, a cylindrical bullet will "go to sleep" when it leaves the muzzle. And will fly through the air with such gyrostatic stability that it will keep its point to the front, and will travel on a course in line with the axis of the bore (less the fall due to gravity) to a very considerable distance. In fact, these little "bullet-gyrostats" may so resist outside influences trying to divert them from their straight path that they may group in a circle less than 1 inch in diameter at 100 yards or 20 inches in diameter at 1000 yards. Naturally the energy and velocity of rotation gradually falls off and eventually gyrostatic stability is lost, the bullet begins to wobble, then no longer flies with its point to the front, all semblance of accuracy of flight

is lost; it encounters much air resistance and finally falls to the ground.

The longer the bullet with respect to its diameter, the faster it must be rotated to give it gyrostatic stability. Thus, if we have two bullets of .25 caliber, one weighing 87 grains and the other 110 grains, we must impart a higher rate of spin to the longer 110-grain bullet than is needed to stabilize the shorter 87-grain projectile. Obviously we can impart the higher rate of spin in one of two ways: (a) give the rifling a faster twist, or (b) drive the bullet through the existing rifling at a faster rate of speed. It is obvious that if the velocity of a well stabilized bullet is lowered, then in order to maintain the desired rate of spin a quicker twist must be given to the rifling. As a concrete example let us take the case of our caliber .30 Army rifle. The original bullet designed for this rifle weighed 220 grains, had a diameter of .308 inch and a length of about 1.25 inch. These caliber .30 Army cartridges are used in both rifles and machine guns, and while a rifle may not be used much at distances over 600 yards, the machine gun must throw its bullets with a fair degree of accuracy to 2500 yards or beyond. It was found by calculation and experiment that the rifling in the barrel had to be given one complete turn in each 10 inches of the barrel's length in order to maintain stability and accuracy to *extreme* ranges. Accordingly all barrels of U. S. Army rifles and machine guns of caliber .30 are rifled with a one to ten twist. However, such a quick twist would not have beeen essential if the ballistic engineers had needed to consider only rifle ranges instead of machine-gun ranges. It was demonstrated by H. M. Pope in 1904 that a 14 inch twist would stabilize a 220-grain caliber .30 bullet up to 1000 yards.

The barrel of the .250/3000 Savage rifle was originally designed for a .257 inch 87-grain bullet and given a 14 inch twist. This twist satisfactorily stabilized bullets up to 100 grains weight for distances of 500 yards or more when fired at m.v. 2400 f.s.* or over. But the 14 inch twist would not stabilize a 117-grain bullet even to 200 yards unless it was given a muzzle velocity of 2500 f.s. or over. In the .257 Roberts cartridge a 10 inch twist stabilizes this 117-grain bullet to at least 600 yards when fired at m.v. 2500 f.s. But this same 10 inch twist at m.v. 2500 f.s. is a little too fast for a lighter bullet of 87 grains which does not give its best accuracy with so fast a spin. As is demonstrated by the boy's top, our gyrostatic bullet will not settle down on its course ("go to sleep") if it spins too rapidly or too slowly.

Having carefully "mated" the length and velocity of the bullet with the correct twist of rifling to insure gyrostatic stability at the desired ranges, we must next insure that the bullet will be as nearly perfect as possible when it emerges from the muzzle. In fact the bullet is often more responsible for accuracy (or lack of it) than the barrel. Neither absolutely perfect bullets nor absolutely perfect barrels can be produced in quantity, but skilled workmen with proper tools can turn out amazingly uniform barrels and bullets under modern production and inspection methods.

The bullet or bullet jacket must be composed of metal soft enough to "upset" (expand) and fill the bore, but tough enough to withstand the cutting, wrenching action of the rifling as it bites into the bullet and sets it spinning as it travels down the barrel.

The bore must be a true cylinder from breech to muzzle despite the spiral rifling because any tight spots or oversized sections in the bore may allow the hot, high speed powder gases to cut by between bullet and barrel to the possible injury of both.*

When a bullet is to be driven at such high velocity or is to be given so fast a spin that it would strip through the rifling instead of following the twist, the barrel maker may solve his problem by starting at the breech with a very slow rifling twist gradually increasing the pitch until the desired rate of spin is obtained at the muzzle. This is known as "gain twist" rifling. It obviously saves wear and tear on both bullet and barrel, but it is not so easy to cut as the ordinary uniform twist and, therefore, is only found in those cases where it is essential to proper delivery of the bullet-gyrostat from the muzzle.

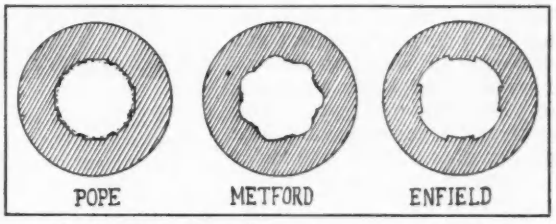


Fig. 2. Cross-sections of three common types of rifling

The bullet must be of the correct diameter to fit the particular type of rifling used. There are a vast number of types of rifling, almost every conceivable shape and dimension of lands and grooves having been used or experimented with at one time or another. Cross sections of the three most commonly used types of rifling are shown here (Fig. 2).

Generally speaking, the Pope system has been found to be best for lead-alloy bullets loaded into the bore from the muzzle, or seated in the breech ahead of the case. The inner dotted circle in the drawing shows the diameter of the bullet which just touches and rides on the top of the lands and on the center of the bottom of the square grooves. The powder, particularly the black powder, used in the older lead bullet rifles gave much more of a sudden blow to the bullet at the start of its burning than the "shove" of modern smokeless powders. The Pope rifling very accurately centered these lead-alloy bullets in the bore by providing contact with the lands and the center of the grooves. Consequently when the blow of the black powder gases caused the soft lead bullet to expand it very evenly and exactly filled the rifling to the bottom corners of the grooves.

The Metford form of rifling with rounded grooves and lands had the virtue of ease of cleaning and oiling in the field. It was used almost exclusively for all the better English rifles in the black powder days that just preceded smokeless powder and metal-jacketed bullets. For this rifling, generally speaking, the diameter of the lead bullet should be a mean between the bore and groove diameter.

The Enfield rifling with square cornered grooves and lands has proved to be the best, or at least as good as any

* The ballistic engineer abbreviates "Muzzle velocity 1030 feet per second" to "m.v. 1030 f.s."

* The inspection operation of measuring the inside of the finished barrel to make sure it is of uniform diameter throughout its length is called "star-gauging" the barrel.

BRIDGEPORT, CONN., JUNE 1943

Rifle Remington

Possibles and Impossibles

by **FRANK J. KAHRS**

Every now and then I hear about a rifle or pistol club secretary of outstanding ability and reputation. Usually it is a prominent club, active and aggressive. I could stop right here and say, "Well, that's the reason why the club has been so prominent and successful in shooting circles." However, I think the subject is too important to pass over lightly, so I am going to add a few thoughts that come to me as a result of the experiences I have had as a club secretary.

* * *

The real reason I got the first job was because I was willing to work and was interested in shooting. It didn't take me long to discover that the rest of the club members were willing to let me run things to suit myself so long as I did all the work. When the load became a bit heavy, I called on some of the members I knew were willing to help me with some of the details and drudgery; but, although they were willing enough, they always seemed to have something else to do on shooting nights immediately after they shot their weekly score.

Getting down early on shooting nights . . . checking the lighting system . . . fixing damaged carriers . . . tidying up the range and seeing to it that the place was warm and comfortable became a regular habit with me. Then, too, there was the important matter of having a sufficient supply of targets and ammunition on hand at all times . . . arranging a schedule of matches and giving pep talks to the members who were not particularly keen on match shooting . . . and helping to keep up the morale, spirit and interest of the members. Collecting dues was also a chore!

The only compensation I received was a good turnout of members and a good team score that week. I am mentioning this only to establish the fact that the very life of a club depends on one man—the secretary. I

don't mean to say I was the perfect secretary, but I did have enthusiasm and energy . . . and unless you have these, no matter how hard you work, you won't get very far.

* * *

For the most part I think club members appreciate the hard-working secretary, and if they do bawl him out and blame him for something that goes wrong, it is usually done thoughtlessly. Yes, being a club secretary is a thankless job. If you have a good secretary, treasure him as you would a priceless pearl, because good secretaries are very scarce.

Of course, there are many exceptions, and I know of some clubs where there is a fine spirit of cooperation and appreciation among the members.

Actually, the secretary is not the man who should be responsible. The executive officer is really the man, and practically all of the things I have listed as duties of the secretary have been assumed by him because no one else would tackle the work. After all, it doesn't matter whether it is the secretary or the executive officer, it is usually one man who can make or break a club.

Any time you can show me a successful club, I'll find for you in that club the one man who is responsible. He is usually the secretary. If these passing thoughts happen to catch the eye of any individual in any club who feels that he measures up to the standards I have mentioned, I will feel well repaid for the little effort involved in writing these few lines, and it will also afford me the opportunity to take off my hat to that man.

WANT TO IMPROVE YOUR HANDGUN SHOOTI?

If you're having trouble with the 10 ring lately, or're not on the best of terms with a possible over ap Perry course, here's a booklet that will help you ne these difficulties and get your scores up where th!

"LEARNING TO HIT WITH A HANDGUN" is written by one- ica's foremost revolver and pistol shooters and a valuable advice and information for all handgun — from Tyro to Master. It's free, of course . . . te to Peace Officers' Section, Remington Arms Com Bridgeport, Conn., asking for a copy of "LEAR O HIT WITH A HANDGUN." The booklet will d to you at once.

THERE'S ONE IN EVERY CLUB *The "Militar*

Remington News

A PAPER FOR PEOPLE WHO SHOOT

I'm keeping a nose on things

I'm just a hound dog called Butch to about everybody but The Boss. To him I'm *The Nose.*

Why, he'd no more think of going hunting with any other nose than he'd think of going without his gun.

But now The Boss has gone to war.

I'll bet he misses those winter mornings, when the air itself smelled good. There'd be a light, tracking snow. And when I sang out on a hot trail...boy! ...it's a wonder they haven't signed me up for opera!

You can bet I miss those days, too. But I know that The Boss is in there fighting for the right to enjoy more of those days of freedom to have fun.

"Keep a nose on things, Butch," The Boss said when he left. And am I doing it! Just wait till I show him that new place I've found!

Here at Remington we are doing everything in our power to speed peace through victory...

—*during 1942, Remington produced enough small arms ammunition to fire more than 300 times at every Axis soldier.*

—*during the last 7½ months of that year alone, Remington produced more small arms ammunition than the entire country produced during all four years of World War I.*

—*thousands upon thousands of military rifles were speeded to our armed forces all over the world.*

—*and Remington has received four Army-Navy "E's."*

The many thousands of us who are Remington are grateful that we are able to serve our country. And after the war is won, we will be glad to serve our sportsmen friends again with the famous Remington line of sporting arms and ammunition.

Meanwhile...as a reminder of happy hunting experiences in days past, and of those yet to come...you might like a free, full-color enlargement of the picture above. If so, write *Dept. E-3, Remington Arms Company, Inc., Bridgeport, Conn.*

Remington

DU PONT

other type, where modern cartridges loaded with smokeless powder and metal-jacketed bullets are used. It is the easiest type to cut, and no other type has proved to have sufficient superiority over it to warrant the greater cost of production.

Practically all modern American rifles have the Enfield type of rifling with either four or six grooves. Enfield rifling is even used in many of our best caliber .22 rimfire barrels; although for this purpose it is debatable whether the Pope or the Enfield cut is the best. With the Enfield rifling it is also debatable whether the diameter of the metal-jacketed bullet should be slightly smaller than groove diameter, the same size, or slightly larger. British practice is to make the bullets with relatively thin jackets, and soft lead cores, and slightly smaller than groove diameter so they will expand and fill the grooves.

FIGURE 3

When using boattailed bullets, it is thought that best results are secured when the bullet is slightly larger than groove diameter, say a bullet having its cylindrical portion .3087 inch for a barrel with a groove diameter of .3080 inch. With barrels for very high intensity cartridges giving muzzle velocities of 3500 f.s. and over, and breech pressures of 50,000 pounds per square inch and over, some experimenters have claimed equally good accuracy with bullets .005 inch larger and .004 inch smaller than groove diameter. This is probably due to the fact that at such high pressures and velocities the bullet "upsets" and fills the rifling even though its original diameter is slightly under the groove size. It does seem to be an established fact that the boattailed bullet does not expand to completely fill the grooves as promptly or as surely as does a flat base bullet, and hence it should be of at least groove diameter.

The length of the barrel may or may not materially affect the velocity and rate of spin of the bullet. If the powder has all burned by the time the bullet has moved just a few inches down the bore, there will be an end to expansion of powder gases which were accelerating the speed of the bullet. If the length of the bore extends beyond the point where the gases stop pushing the bullet, the increased barrel length merely sets up increased friction which will actually slow the bullet's speed. As a practical matter this condition will rarely occur as most rifle cartridges carry a charge of powder of such type and volume as to continue some pressure on the base of the bullet as long as it remains in the bore.

The exact variation in velocity due to variation in length of bore is not constant. Differences in powder, primer, caliber, bullet composition, bullet weight and twist of rifling all affect the final result. A rough figure often used for cartridges of the .30-'06 Springfield type is 20 to 25 feet per second for each inch of barrel added or subtracted between 20 inches and 34 inches. Advertised velocities for new "super-speed" cartridges are sometimes based on tests in 28 inch to 32 inch barrels, and are therefore considerably higher than the velocities which will be obtained by the average hunter using a 22 inch to 26 inch barrel.

A word of caution will fit nicely into our discussion of the pressure of the expanding gases on the base of the bullet. Never drill a hole into or file away the point of a full-metal-cased bullet in the effort to produce an expanding point. Bullets which are manufactured with an expandable point have a solid metal base to take the pressure of the powder gases (Fig. 3-B). On the other hand, bullets which are made with metal-cased noses (called "full metal patched"—"F.M.P.," or "full metal cased") have open bases with the lead core exposed (Fig. 3-A). If the metal nose of such a bullet is cut away, the expanding powder gases will drive the bullet into the rifling which will dig into the metal case and check its forward motion. The powder gases continue to push with great heat and violence so the soft lead core is pushed forward through the open nose of the bullet clear out of the bullet jacket and out of the barrel. This relieves the gas pressure and the bullet jacket remains stuck in the barrel. If another round is quickly loaded and fired (because the first shot was certainly a miss), a blown up gun results.

All military and target bullets are full metal cased ("F.M.P."). All hunting bullets are of the expanding

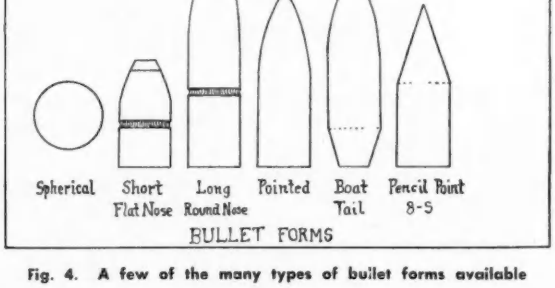


Fig. 4. A few of the many types of bullet forms available

point type. They are designated by a variety of trade names and a great deal of thought has gone into their design. It is not feasible to illustrate the various brands but general types are illustrated in Fig. 4.

Now having discussed the Bore and the Bullet, we will take up the Chamber and the Cartridge next month.

DURING the first World War, according to the Army's Chief of Ordnance, it took an average of 17,000 rounds of anti-aircraft fire to hit, but not to bring down, a plane. Statistics from Guadalcanal have shown that, firing with 90mm. guns at 27,300 feet elevation, it averaged but 50 rounds per plane to bring it down.

POWDER SMOKE: READERS COMMENTS THE NEWS DESK

RE-LOADS . . .

POST WAR PROBLEMS

Editor: *Maryville, Tenn.*

The Old Coach in the April issue of THE AMERICAN RIFLEMAN brings up the matter of obtaining sufficient data as to how and why a rifle shoots and touches upon a form of target competition we have been advocating for a good while. We agree perfectly that most small bore shooters do not really know much about the rifles they use and thus miss some of the most interesting facts that could be learned about them. We own some very accurate small bore match rifles and have been shooting them for years but we would have only the slightest idea what would happen under varying conditions. On the other hand we have an old Springfield M1 which has been used for squirrel hunting and which is pretty well known and we can hit with it from just about any position and under most conditions of light, wind or what have you.

While we have no objection to an expenditure of several hundred dollars for as fine a small bore outfit as can be had for match shooting under the conditions that existed before the war, after the war is over and small bore matches are again held it seems to us that some new form of shooting should be brought out which will not reach beyond the means of the average farm boy or factory worker and which will, at the same time, conform more to military conditions. In short, the ones that want to can continue small bore match shooting under former rules, but this kind of competition should be supplemented by matches more attractive to a decidedly larger proportion of our citizens.

First, for the type of competition we advocate it would be necessary to have a new type of rifle—as near to the current service rifle as it is possible to make it. The powers that be almost had the right idea when the M1 Springfield was brought out, it needing only a magazine that could be inserted from the top instead of underneath, a military stock and military sights to make it a perfect sub-caliber copy of the service Springfield. But instead of making such a rifle easily available and arranging practical and attractive matches for it which would familiarize non-military shooters with the service rifle, they brought the rifle out in a form that did not qualify it for the precision target shooting then becoming popular.

After this war we would like to see the Garand rifle revised to handle the .22 L. R. cartridge from the same size and weight magazine as employed for .30 caliber ammunition, and so that it will operate exactly as now. With the few other necessary mechanical changes a new form of small bore match rifle could be brought out which should not have to sell for more than fifty dollars.

All matches fired with this gun should be strictly military with no alterations to the rifle, no telescope sights, no spotting scopes and no sighting shots allowed. Each shooter should be permitted to bed the barrel as he wishes or, perhaps, to ream the peep sight to the size best adapted to his eyes. When on the firing line he would shoot only the number of shots called for in the match from a cold barrel so that he would really have to learn his rifle. Most shooting should be rapid fire and from other positions than prone with sling. Only a score book and the rifle should be carried to the range. This would necessitate shooting our rifles a great deal under every sort of condition and keeping all data regarding sight adjustment, etc. This would develop experienced riflemen, not just machine rests that have to eat once in a while. By requiring one to go from standing to prone and fire his score at 200 or 300 yards without sighters or spotting scopes a little action would be put into the small bore game which, doubtless, would be more attractive to the men returning from this war of movement who might otherwise not care to enter a twenty or forty shot prone match which would call for the purchase of an expensive, twelve-pound rifle not good for anything else, and other necessary equipment.

Of course, we don't want to see that kind of shooting go out entirely. Some shooters will not care for this military-type competition. As a matter of fact we think the precision, long range small bore and big bore competitions we knew before the war will be greatly increased, but we should have something for the average man who likes to shoot but who doesn't like the expense of the old small bore game.

Clifford B. Bogle.

NEW OHIO LAW

Columbus, Ohio.

The National Rifle Association,
Washington, D. C.
Gentlemen:

I am pleased to report to you that Governor John W. Bricker today signed Am. Sub. HB-125, Mr. O'Brien-Bubna, which will make this bill law within a 90-day period after this date.

This bill, as you know, amended and supplemented an old Ohio law, Section 12967, which imposed jail sentence and fine on *anyone* who provided a minor under 17 years of age with any firearm.

The law, before this change, therefore had the effect of making illegal our work with juniors of that age in teaching them firearms safety and marksmanship. One of the practical effects was to stop all activity of the Boy Scouts of America in Ohio and especially at their summer camps.

The new and amended portion of the law will make the following exceptions:

1. When such a minor is legally hunting under the hunting laws of Ohio.

2. When such a minor is receiving safety or marksmanship instruction from an organization which has been approved by the Adjutant General of Ohio, or by his parent.

Our Association wishes to express its appreciation to The National Rifle Association for the very valuable assistance it gave us in securing favorable action by the Legislature. Among this help were the letters you sent so promptly to all N. R. A. members in Ohio bringing the bill to their attention.

I am sure that if all N. R. A. members knew of the help that you can and do render, that they would not fail to call on you in any legislative matter to secure your experienced advice and assistance.

Ohio Rifle and Pistol Association,
H. D. Erk, Chairman, Legislative Committee.

BIT IRREGULAR

Editor: *Hubbard Lake, Mich.*

I note that you have received many complaints regarding the irregular delivery of magazines, and I must add a slight "irregularity" that I noticed.

Upon visiting our mail box yesterday (April 16) I was rather surprised to find my RIFLEMAN waiting for me and, while I thought it a bit out of time, I surely was glad to get it, and hurried back home to see what was inside.

Upon removal of the wrapper I found a

Governor John W. Bricker adds his signature to a bill amending an old Ohio law which made it illegal for minors under 17 to be furnished firearms. Present at the signing were representatives of organizations interested in passage of the measure (L. to R.): H. D. Erk; Harold Daumler; Scott Knisley; State Senator Evert E. Addison; Bob Miller; Bob Fouty; Senator Frank E. Bubna; L. R. Bucher; Rep. M. P. O'Brien; J. J. Saslavsky

NEW BOOKS:

SKI TRACK ON THE BATTLEFIELD

By V. A. Firsoff, M.A.

This is a book devoted to the military employment of ski and skiers, the first of its kind in the English language. The author sticks to his subject by ignoring the sport of skiing. Neither does he disclose the technique of military practice, and he merely names the kinds of skiing without describing them. The 37 illustrations are of military scenes involving ski, but they do not show how. It is primarily an historical reference book which deals with what has been done with ski on the battlefield.

From the beginning of travel and transportation in snow-covered areas of the world the development of the ski, by type and purpose, is recorded and geographically grouped. The limitations of their tactical employment are recognized by the author. He briefly describes clothing, sleds and essential equipment and mentions necessities including food and essential hygiene. Finally he adds examples of battlefield applications from the Russian-Finland, British-Norway and German-Russian campaigns of the present war.

It is all interesting, and, for the major part, entertaining, on account of the author's smooth narrative style. It could have been more informative but for the currently inaccessible sources of some important material rendered unavailable by the war and by military censorship. In spite of this handicap the author compiled an informative book.—F. C. N.

A. S. Barnes and Company, 67 W. 44th Street, New York, N. Y., Cloth, 158 pages, $2.00.

RE-LOADS—*Continued*

very interesting cover page showing an amateur gunsmith at his bench apparently attaching a scope sight to his old Winchester Single Shot. As I turned the pages I was delighted to see the many interesting articles and, instead of being a sort of "Army and Navy Magazine" as recent issues have been, it was really the "Old Rifleman" again.

I could hardly pass over some of these articles to get to the classified ads to see what was for sale or swap, but when there I became very much interested as the prices seemed very low. Then as some of the ads began to take on a familiar look I turned to the cover page again to check the date—which was February, 1939, the one copy missing from my files for more than four years and delivered by our postman yesterday, all rolled up as they were years ago. However, the address sticker was rather faded.

A bit "irregular" in delivery, wouldn't you say? *Otto Atwood.*

BRITISH INSTRUCTOR

Editor: *London, England.*

I was forced to close my firearms business when I was called up for active service in 1939 and for the last three and a quarter years I have been shooting instructor, rifle and revolver, to the Navy, Army and Air Force staffs of South Wales Ports. Recently I have had the very great pleasure of instructing hundreds of members of the USA forces attached to these ports.

It was great to instruct your men. I seemed at home with them right from the start due to my being a subscriber to The American Rifleman these many years past. Your men use the sling the way it should be used. Our own men are not instructed to use the sling at all.

I found a great number of your men well grounded in the use of the rifle and very keen. Some of them were readers of The American Rifleman. I had no trouble with these men at all and found some real fine shots among them.

E. M. Ginn, Captain.

OUTRAGEOUS PRICES

Editor: *Whipple, Ariz.*

As a Life Member since 1929 I think I have a right to protest ads in the Rifleman at outrageous prices. What's the matter with you back there? Do we have to have these just because we are sportsmen? I saw an ad in the April issue of .22 L.R. cartridges for ten dollars a carton—one dollar a box. There are other things nearly as high. I would like to know what some of the other members think of this.

William F. Stewart.

BIG-HEARTED SPORT

Editor: *Bremerton, Wash.*

Upon looking through the ads in the Arms Chest in the April issue I was shocked to find an ad on page 50 wherein some robber is generously offering .22 long rifles at $10.00 per carton of 500, or just a mere one buck per box of fifty cartridges. How come such an ad is accepted from this big-hearted sport?

You might say: "You don't have to buy his cartridges at such a price." You're damn well right we don't have to, but a lot of shooters with a good .22 and no shells for it will be tempted to take some of this profiteer's stock.

It struck me that this ad is all out of place in The American Rifleman. Let's muzzle these birds who happen to have a stock of cartridges and are taking advantage of war conditions to hold up other riflemen.

Major, USMC.

We share your sentiments, Gentlemen, but, unfortunately, such an advertiser is entirely within his legal rights in asking whatever price he wishes. It is impossible for The American Rifleman *to refuse these ads without setting itself up as a price control agency which we do not have the authority to do.*—Ed.

WANTED—BACK ISSUES

Due to constantly increasing demand and because only a limited number of extra copies are printed each month, our supply of two recent issues of The American Rifleman—March and May—has become exhausted. Extra copies are needed to take care of requests mostly from subscribers who moved and failed to receive the magazine.

If you have an unneeded copy of the March, 1943, or May, 1943, Rifleman, or both, you can help the N. R. A. and some fellow subscriber by returning these issues. The magazines will be promptly remailed to a grateful reader.

OOPS!

Editor: *Los Angeles, Calif.*

On page 11 of the current (May) issue occurs the statement, "an ordinary .30 caliber *bullet* can be used as the core of a booby trap. . . ."

This is amazing to find in a periodical issued in the interests of persons interested in firearms. Had it been in a ladies sewing circle publication it might be excused. Though I apologize in the same paragraph for placing a sewing circle in the same category as the moron who wrote the article.

If such defectives can break into The American Rifleman, then we truly are in deadly danger. I have been in the habit of passing along my A. R. when I have read it. But I am ashamed to do so with this issue. You see, all my acquaintances are reasonably intelligent and most of them have at least *seen* some ammunition.

Albert Garinger.

We make no claims to perfection, so we'll just apologize. Of course we meant cartridge. *Our proofreader must have been thinking of other things when that sentence rushed by.*—Ed.

WHO'LL WRITE?

Editor: *Rockford, Ill.*

As I will be a patient in the Sanatorium for some time to come I find, as a sportsman, it is rather a trying situation. I would like to hear from anyone who is interested in target shooting. I have had all my equipment put away for this year though I do not know when I will get a chance to use it again. But I surely would be interested in hearing from anyone who could find time to write to me and discuss any kind of sports.

Wayne Siebert,
Rockford Municipal Sanatorium.

REFRESHED MEMORIES

Editor: *Springfield, Ill.*

This letter is written, not with the thought in mind of being efficacious, but to express to you the feeling I have about the frankness and good Americanism of *Rifleman* editorials.

We need to have our memories refreshed from time to time as to just what the Constitution of the United States stands for and represents. George Washington and his colleagues, Abraham Lincoln and others, certainly did intend for this to be a government of, for and by the people and worked diligently toward that end. We must double our efforts especially now and take cognizance of the institution being set up for us, to deliver something to it and not expect it to deliver everything to us.

Your mention of dilatory individuals is certainly timely. Too many individuals have become endowed with the "Let George do it" attitude no matter how poorly "George does it." *Edward M. Reavley.*

GUN CAMPAIGNS

As we go to press word has not yet been received from the Navy Department clarifying the confusion between Navy Officials in Washington and in the various Naval Districts concerning campaigns to collect used guns for the Navy. However, on page 49, this issue, a campaign for the purchase of used handguns is announced. The N. R. A. has investigated and found this campaign to be authentic. Greenwald & Haughton has a signed contract with an Allied government for the purchase of suitable arms.

RIFLEMAN IN RCAF

Three reasons induced Flying Officer Merlin Kehrer, of Louisville, Kentucky, member of the National Rifle Association, to join up with the RCAF at Windsor in 1941. He loved to fly; he craved adventure; he wanted to help England. He has had his share of all three and recently returned to London from the Middle East and dropped into the American Red Cross Eagle Club for letters from home and to pass the Gen (general information) to his flying pals.

Merlin has been flying communications in Egypt (carrying important orders) from General Headquarters to various Squadrons. This means low flying, never over a thousand feet. "You have to dodge the hills," he said. "Once my plane got stuck in the sand and I tried to move it by myself. This resulted in a strain and I spent a month in a hospital. But I'm fit for flying again now. I am hoping to transfer to the U. S. Air Corps soon."

The narrowest escape Merlin has experienced so far was during a bombing raid on Port Said. "I was trying to keep cool on a roof top," he said, "and a bomb fell three doors away. It only knocked me down and gave me a big scare. What they'd call bags of panic in the Air Force.

"Flying to Port Said once my motor quit and I was forced down to within 100 feet of the water," Merlin continued. "I knew my ship wouldn't float and there wasn't a sail in sight, as the old mariner would say. I cut the engine and drew off the gas in the carburetor and she started again just in time."

Merlin went to the University of Louisville and made a hobby of rifle shooting. He belonged to various rifle clubs, in addition to holding his NRA membership. He qualified as Expert on the range.

SHOOTER HERO

Richie Sierer, veteran rifle coach at Far Rockaway (N. Y.) High School, is mighty proud over reports of the aerial gunnery of Lieutenant MacArthur Robert Powers of the U. S. Army Air Corps, who shot down four Junkers 52's and a Messerschmitt 109 in combat over the Mediterranean a few weeks ago. Sierer has a right to be proud for it was he who gave Lt. Powers his first marksmanship instruction during the latter's four years at Far Rockaway High. Rated as an N. R. A. Expert, and co-captain of his school's great 1934 rifle team, Lt. Powers has kept up his marksmanship ability and now has a bag of seven Nazi planes.

COMING EVENTS

All events listed below are Registered Class C matches.

Michigan, June 6—Spring Small Bore, Royal Oak. Tom Pounder, 810 N. Rembrandt.

Oklahoma, June 6—Magic Empire Small Bore, Tulsa. Dixie Clark, 114 S. Detroit St.

Massachusetts, June 13—Deerfield Small Bore, Shelburne Falls. Emory C. Broadhurst, 95 Mechanic St.

Maryland, June 20—Annual Pistol, Sparrows Point. Marcus H. Miles, Police Department.

Iowa, June 27—1st Annual Pistol, Bettendorf. Herbert J. Jensen, 930 W. 14th St., Davenport.

Louisiana, July 4-5—La. Small Bore, New Orleans. T. L. Hollis, 6323 Patton St.

Clyde Baker

One of the most popular contributors to RIFLEMAN pages, Clyde Baker, author of many home gunsmithing articles, died April 8, 1943. In ill health for some time he entered Oak Noll Naval Hospital on March 22 and passed away following an operation.

Mr. Baker was born at Cowgill, Missouri, March 26, 1894, but received most of his

schooling at Kansas City, Missouri, where his family moved.

At the outbreak of World War I he enlisted in the Marine Corps and had nine months service in France. Upon returning to the United States and his home he went in for the hobby he always loved—guns, gunsmithing and repairing.

In 1922 he married Edna N. Mengel and then, in his own home, established a gun repair shop where he remodeled, rebuilt, repaired and restocked guns of all types in his spare time. His occupation was advertising. It was during this time he wrote his book, "Modern Gunsmithing," which became one of the most enthusiastically received writings of that subject. He was a lover of the outdoors and hunting came to him naturally. That and his gunsmithing hobby provided the material for the many articles he wrote for THE AMERICAN RIFLEMAN, *Sports Afield, Mechanix Illustrated, Outdoor Life* and others.

After Pearl Harbor Mr. Baker answered the Navy's call for men with specialized trades. Then being in the gun business entirely, he enlisted and soon was assigned to instruction on the subject of "Guns and Gunnery" at San Diego. In July, 1942, he was assigned to special duty at the U. S. Naval Base at Oakland, Calif., where he worked in a small arms repair unit. Everywhere his fine work and gunsmithing ability was recognized and he was made Gunners Mate 1st Class last February.

Surviving him are his widow and two sons, William Edward, 15, and Robert Owen, 12. Clyde Baker will live long in the memories of those who loved the outdoors, fine firearms and expert worksmanship.

Charles Winthrop Sawyer

Colonel Charles Winthrop Sawyer, Ordnance Department, U. S. Army, Retired, often called "The Dean of American Firearms Historians," is dead. Death came April 18, at Napoleonville, La., at the age of 74.

Largely credited with starting the modern trend in gun book writing and the inspiration of several modern gun editors and book authors, his works command a permanent niche in our firearms literature, not only for collectors but also for all who have an abiding interest in arms development.

Colonel Sawyer was born in Boston, Mass., October 27, 1868, and received his education at the Massachusetts Institute of Technology. He practiced architecture and was a professor of Higher and Applied Mathematics at M.I.T. for many years. He entered World War I as Expert Advisor, after having taken officers training at Plattsburg, in munitions factories from Canada to the Gulf along the east coast.

He returned to his writing at every opportunity and resumed it as a profession after retirement from the Army. Colonel Sawyer had five books on the market and was completing "Historical Romance," illustrated with his own pen and ink sketches of the French and Indian Wars. One of his books, "United States Single Shot Martial Pistols," also illustrated with the author's sketches and published in 1913, is one of the rarest of semi-modern books.

Present at the time of his death was Colonel Sawyer's wife, Adelaide L. Sawyer. His remains were cremated in Memphis and, by his desire, his ashes were scattered.

W. H. Delbruegge

William H. Delbruegge of Crescent Lake, Oregon, one of the State's foremost marksmen in former years, died last April as a result of injuries received when struck by a train near his home. A veteran of A. E. F Roumanian Challenge Cup competition and a former captain of the Oregon civilian team, Mr. Delbruegge had acquired a large collection of shooting trophies and a wide circle of friends throughout the west and middlewest. He was 53 years of age.

Herman S. Sandoe

Herman S. Sandoe, 50, well known in eastern pistol shooting circles as a member of the Lancaster Police Pistol Team and the York (Pa.) Pistol Club, died of a heart condition at Lancaster General Hospital March 29. A member of the force since 1925, he became interested in target shooting several years ago and soon developed into one of the most enthusiastic and successful competitors of that area. Patrolman Sandoe, stricken ill at the court house only a week prior to his death, is survived by his wife, a son, George, a brother, Earl, and his mother.

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THIS MONTH:

Steel Penetration · .32 to .45-Caliber Handguns · Eimer .400 Magnum · Big Bore Nomenclature · .35 Remington Loads · Home Made M.C. Bullets · Letters · Trade Dope

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Handguns on Steel. A few years ago we reported shooting the .357 S. & W. Magnum revolver on a 3/16-inch steel plate. At 15 yards our factory load fired from its 8¾-inch barrel made a splash, but no dent. The same cartridge in our .357 S. & W. Magnum rifle cleanly perforated the same plate at 50 yards and just penetrated it at 55 yards from a 26-inch barrel. With an 18¼-inch barrel the same load cleanly punctured the same plate at 30 yards and barely penetrated it at 35 yards. Since then we have mentioned incidental tests on steel by others with various loads in different handguns. Also we have done some of it ourselves which has never been mentioned in these pages.

Recently Gordon C. Boser conducted a test with his heaviest handgun loads on a single large steel plate at 20 feet. Then he sent the plate to us and we tried our own loads on the same plate after measuring Boser's indentations and recording the results. We found that our .45 Colt load equalled his best penetration on this plate, and our .357 S. & W. Magnum load beat everything by giving clean penetration at every shot. This plate is shown in the accompanying cut. It is 30 inches long and nearly a foot wide. Like our old plate, it is 3/16 inch thick. The indents were carefully measured for depth and diameter.

The poorest penetration was had with a factory load in the .38 Special caliber. This was a standard smokeless load with 158-grain lead bullet from a 5½-inch Colt barrel. The indent was too shallow for measurement and was recorded as 0.0 with a width of .125 inch. Next poorest was the .32-20 factory 100-grain M.C. smokeless load from a 6-inch S. & W. barrel. This was only .025 inch deep and .20 inch wide. The standard blackpowder factory load (180-grain lead) from a 4¾-inch .38-40 Colt gave .025 by .27 inch. A handload of 4.5 grains No. 6 and a 206-grain bullet in Boser's .401 Special (5½-inch Colt barrel) gave the same depth but .30 inch width. In the .44 Special with same barrel-length this penetration was duplicated by 4.5 grains Bullseye and a 240-grain bullet. A factory load in this .44 Special with 246-grain lead bullet was not much better. The depth was .03 inch and the diameter .15 inch. In this same category was the .30 Luger pistol with 3¾-inch D.W.M. barrel when fired with a 93-grain M.C. factory load. The depth was .03 inch and the diameter .31 inch. The only other weak sister was the .45 A.C.P. factory load with 230-grain M.C. bullet from the Model-1917 revolver with 5½-inch S. & W. barrel. The indent was .03 by .32 inch.

In the next class, this same revolver gave .04 inch depth and .24 inch width of indent with the factory 255-grain lead bullet fired from the Auto Rim case. The .44-40 W.C.F. factory load with 200-grain S.P. bullet gave .04 by .30 inch from a 5½-inch Colt barrel. The .401 Special equalled this with 4.2 grains Bullseye behind a 206-grain lead-alloy bullet. The depth was .04 inch and the width, .285 inch.

In next place comes the same .401 Special with 4.5 grains Bullseye and a 192-grain bullet. The depth was .05 inch and the diameter, .225 inch. A blackpowder factory load with 200-grain lead bullet in .44-40 W.C.F. caliber from a 4¾-inch Colt barrel gave .05 inch depth and .28 inch width of indent. This was duplicated by the Super .38 Colt pistol with one factory load (130-grain M.C. bullet) which made .05 by .26 inch. However, another brand of the same caliber from the same 5-inch Colt barrel gave .19-inch depth and .23-inch width of indent.

The .44 Special with 5.0 grains Bullseye behind a 205-grain lead-alloy bullet gave an indent of .06 by .24 inch. This was duplicated by three loads in the .401 Special. One was 26 grains of FFg behind the 206-grain (1-15) bullet, which made .06 by .285 inch; another was 5.0 grains No. 6 behind the 192-grain (1-15) bullet, which made .06 by .225 inch; the third was 6.5 grains No. 5 behind the same bullet which made .06 by .235 inch. The .30 Luger pistol and the 93-grain S.P. bullet in a factory load gave an indent of .06 by .19 inch.

The .401 Special with 5.0 grains Bullseye and a 180-grain lead bullet (.38 W.C.F. factory) gave .075 inch depth and .275 inch diameter. In the same gun 5.0 grains No. 6 and the 206-grain bullet also gave .075 inch depth, and the width of indent was .30 inch. A factory smokeless load in the .45 Colt did slightly better with its 250-grain lead bullet. It was fired from a 5½-inch Colt barrel. The depth was .08 inch and the width .225 inch.

In the .401 Special 12 grains No. 80 gave .09 by .25 inch with the 180-grain lead bullet (.38 W.C.F. factory). The 192-grain bullet with 11.5 grains in the same gun gave .10 inch depth and .225 inch width. The same load made .11 by .325 inch with the 210-grain lead bullet of the .40-60 factory cartridge. With the 206-grain bullet and 14 grains of No. 4759 the penetration was also .11 inch deep, but only .280 inch wide. With a 215-grain bullet (1-10) and 7.0 grains No. 5 it was .10 by .21 inch. A charge of 5.5 grains No. 6 gave the 192-grain bullet a record of .11 by .25 inch. The W. C. Co., .45 A.C.P., 230-grain, Metal Piercer in the M-1917 revolver gave .11 by .375 inch. The .44 Special with a 205-grain (1-10) bullet gave .10 by .25 inch when 8.0 grains No. 5 was tried. The same bullet gave .125 by .31 inch when the load was changed to 6.5 grains No. 6. The .401 Special did as well with the 192-grain bullet and 6.0 grains No. 6. The depth was .125 inch and the width of indent, .25 inch. This same bullet gave .12 by .24 inch with only 3.7 grains Bullseye in the .401 Special.

From this point on, heavier loads were used for greater penetration. Some of them were field loads regularly used by Boser, but some of the heaviest ones were loaded for the purpose of this penetration test only and are not recommended loads. Should anyone wish to make similar tests they should start from a lower level and develop their loads carefully in quarter-grain steps as a heavy load fired successfully in a given outfit may prove dangerous with different components in a different gun.

A regular load of 14 grains No. 4759 in the .401 Special gave the 210-grain .40-60 factory bullet .15 inch depth and .225 inch width. In the same gun 7.0 grains Unique gave a 260-grain bullet .175 by .225 inch in the same steel plate, and 11.5 grains No. 80 gave the 206-grain bullet, .18 by .30 inch. Also 7 grains No. 5 gave this bullet, .19 by .28 inch from the .401 Special. In the .45 Colt a 250-grain (1-10) bullet was tried with 10.3 grains Unique and gave .17 by .32 inch. As before stated, the Super .38 Colt pistol gave an indent of .19 by .32 inch with a 130-grain M.C. bullet in a factory load.

In heavier loads, the .401 Special was tried with 9 grain Unique behind the 192-grain bullet and made .20 by .325 inch. With 8.5 grains behind the 206-grain bullet it made .21 by .29 inch, and with 17 grains No. 4227 behind this bullet it made .24 by .30 inch. It took the W.R.A. smokeless factory load in the .357 Magnum to equal this. It made .24 by .275 inch. The 158-grain lead bullet was fired from a 5½-inch Colt barrel. In the .44 Special, 21.5 grains No. 2400 and the 205-grain (1-10) bullet made .21 by .325 inch, and the same load behind the 240-grain (1-8) bullet made .29 by .325 inch. In the .401 Special, 16.5 grains Sharpshooter gave the .38 W.C.F. 180-grain factory lead bullet, .26 by .36 inch, and 18 grains of No. 4227 gave the 192-grain bullet, .28 by .35 inch.

In the heaviest loads 18 grains of No. 2400 and the 206-grain (1-8) bullet was tried in the .401 Special, giving .35 inch depth and .33 inch width of indent. Another grain was added for the 192-grain (1-8) bullet, which gave .37 by .42 inch. This was nearly equalled by the Remington factory M.C. load in the .357 Magnum Colt, which made .34 by .36 inch.

We were reluctant about shooting this same steel plate at the short range of 20 feet on account of the real danger of intercepting rebounds. However, the interests of science were at stake, so we proceeded to do so taking every possible precaution. Our .357 S. & W. Magnum revolver had an 8¾-inch barrel, and we tried the rifle field load which had perforated our own harder plate at 50 yards when fired from the 18¼-inch rifle barrel. This was the Bond-Ness 155-grain (1-24) bullet and 15¼ grains of No. 2400 powder.

On Boser's plate, from 20 feet, the 8¾-inch revolver barrel sent this bullet a little deeper than Boser's best combination. The indent was .375-inch deep and .30-inch wide. Then we tried a duplex load, which was the equivalent of 17 grains No. 2400, with the same bullet cast of zinc. The Bond-Ness bullet now weighed 105 grains. It made a .40 inch hole through that 3/16-inch steel plate so easily we tried another shot with a backing plate. This one also went through punching out a .40-inch plug and indenting the second plate 1/16-inch deep. We also tried a heavy load of 22.0 grains No. 4759 in the .45 Colt (7½-inch barrel) with a 260-grain (1-24) bullet which made an impressive in-

dent, of the same .40-inch diameter but .385-inch deep. This was slightly better than our field load in the 8¾-inch S. & W. Magnum revolver.

From this test, on a given plate at a given distance, the relative striking power of the loads tried would rank, from deepest penetration to poorest, as follows:

Cartridge	*Bbl.*	*Bullet*	*Load*	*Value*
.357 Mag.	8¾	105	Duplex	40.0*
.45 Colt	7½	260	4759	39.0
.357 Mag.	8¾	155	2400	35.0
.401 Spl.	5½	192	2400	38.7
" "	"	206	"	34.3
.357 Mag.	"	158	Factory	34.7 (1)
.44 Spl.	"	240	2400	30.2
.401 Spl.	"	192	4227	30.3
" "	"	180	SS	29.3
" "	"	206	4227	26.0
.357 Mag.	"	158	Factory	25.2
.401 Spl.	"	205	2400	24.8
" "	"	206	4227	23.7
" "	"	192	Unique	24.2
Super .38	5	130	Factory	23.3 (2)
.401 Spl.	5½	206	No. 5	22.0
" "	"		No. 80	22.0
.45 Colt	"	250	Unique	22.0
.401 Spl.	"	260	"	19.2
" "	"	210	4759	17.5
.44 Spl.	"	205	No. 6	18.7
.401 Spl.	"	192	"	16.7
" "	"		BE	16.0
.45 A.C.P.	"	230	Factory	19.8 (3)
.45 Colt	"	250	"	12.8
.401 Spl.	"	206	FFg	13.5
.30 Luger	3¾	93	Factory	10.3 (4)
.44–40	4¾	200	"	12.7
Super .38	5	130	"	12.0
.44–40	5½	200	"	12.7
.45 A.R.	"	255	"	10.7 (5)
.45 A.C.P.	"	230	"	12.7
.30 Luger	3¾	93	"	12.3
.44 Spl.	5½	246	"	7.0
.38–40	4¾	180	"	10.7
.32–20	6	100	"	8.3
.38 Spl.	5½	158	"	4.2

(*) 100%, or complete penetration (other values are based on width of indent and in addition to their relative penetration).
(1) M. C. Bullet. (2) High Velocity Load. (3) Metal Piercer. (4) Soft Point. (5) Auto Rim Lead Bullet.

* * *

.400 Magnum Revolver was developed as a ".40 Special" in 1924 by C. L. Eimer using the .401 Winchester Self-Loading case. It was first used with .40-caliber rifle bullets, but finally the B. & M. .38-40 bullet No. 403185 was adopted as a standard. The load was 8 or 9 grains No. 3 and later, 9 grains of No. 5 with the 195-grain B. & M. bullet. In 1939 I fired this load in "Pop" Eimer's S.A. Colt on the Camp Perry pistol range. It did not seem to be a heavy load. Another standard or regular load, which I did not try, was 18 grains of No. 2400. The B. & M. bullet was also fired base first when a wadcutter effect was desired.

The .400 Magnum was the outfit praised by Ray C. Thompson as per a recent statement in THE AMERICAN RIFLEMAN. He liked its superior power and effectiveness in field shooting. Another user, since 1928, was F. A. Diestelkamp, of Oregon, who had two of these with 1¼-inch chambers and another pair with 1½-inch chambers. He called it the most powerful and accurate large bore he had ever used. "Pop" says his original job is still in use without any sign of weakness. The .400 Magnum employs .38-40 barrels. "Pop" also developed a parallel job for .44-40 and .44 Special revolvers which he identifies as the .430 Magnum.

* * *

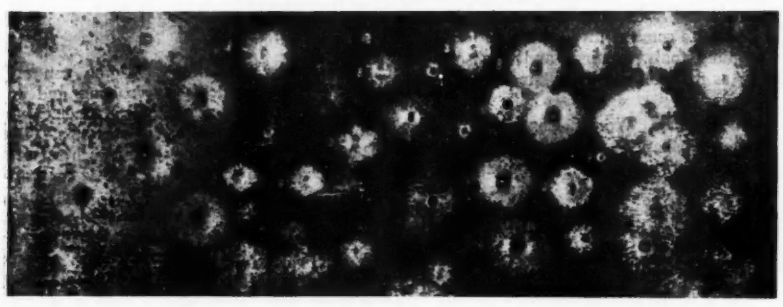
Old Big Bores. J. V. Wagar, who continues to play with many of his old favorites, adds some specific information on several of the old-time cartridges. His letter gives the following dope:

The .400-360 Eley with 300-grain bullet has a diameter of .3585, so it is not a .40 caliber. The case length is 2.72 inches and the rim diameter is .5182. The head diameter is .467 and the neck, .3825 with a bullet projection of .55 inch. In the same confusing way the .577-.500 is a .50 caliber, the .500-.450 a .45 caliber, the .450-.400 a .40 caliber, the .400-.375 a .375 caliber, the .400-.360 a .36 caliber and the .400-.350 a .35 caliber. The is a unique system of nomenclature. Mr. Wagar thinks the basic (first-figure) British cases were straight originally and then necked down to the smaller (second-figure) caliber.

.35 Remington Loads. Fred T. Huntington, of Oroville, Calif., has developed some additional loads for his Remington slide-action rifle. His standard was established by the 100-yard impacts and (3- or 4-inch) groups with 200-grain factory loads. An equivalent handload was 35 grains of No. 3031 behind the same bullet. Then he got a mold for Ideal bullet No. 358315, a 200-grain gas-check design. His mixture was a pound of tin, ten pounds of lead and a lump of Babbitt metal the size of a golf ball. This alloy could be readily cut, although the bullet metal was too hard to be marked by a fingernail. The same load of powder gave the same 100-yard impacts and groups with this bullet. Equivalent loads were 36 grains of Pyro D.G. or No. 1185 powder. A milder load of 31.8 grains No. 3031 also shot well. In softer mixtures this bullet also worked well with 16.0 grains No. 80 in the .35 Remington. The heaviest good load was 22.4 grains No. 80.

Huntington has gotten good results with his home-made .22-caliber jacketed bullets in the 2-R Lovell and .228 Magnum. He uses .22 rim fire cases and also heavier copper tubing at a cost of two-bits per hundred for the .22 bullets and, in .25-caliber bullets, at a cost of a cent each. Those we saw as samples appeared to be well made, and capable of giving the minute-of-angle groups reported. The .25-caliber bullets had not been tested by shooting.

THE STEEL PLATE USED IN THE TEST



Two Letters from an old-timer to Colt's Patent Firearms Mfg. Company take issue with Gordon Boser for presuming that the famous old Single-Action revolver needs any improvement, although Mr. Milliron does mention some of his own. His attitude is the first of this kind I have encountered in a quarter-century of experience with S. A. fans. Most of them have suggested improvements and some old-timers have complained that the modern S. A. Colt did not handle or line up like the original S. A. Colt, although the makers had assured them there had been no changes made in the grips of the two periods; roughly, from 1870 to 1900 for the period of good gripping, and 1915 to 1940, the latter being the griping period.

I think most readers will agree that such experimenters and innovators as Boser, Eimer and others are performing a real service, important to users and makers alike. Being free of the maker's production problems and restrictions, independent experimenters can and do try things which would otherwise remain unexplored. Now and then they may discover something of practical worth to the manufacturer.

No. 1. "I suppose its none of my business, but I cannot resist the temptation to make a few remarks about an article in THE AMERICAN RIFLEMAN, April 1943, page 29, for making some improvements on a gun that has withstood the test of 70 years. It seems that Mr. Boser has greatly improved the old Colt Single Action revolver with coil springs, hinge joints and other gadgets. As any spring can and will break, a coil spring is not much advantage over a flat spring. It depends where it is to be placed.

"There is absolutely no way to improve a Colt bolt or hand or the hand spring. The main spring has stood the test O. K. I never saw but one bolt or cylinder stop broken. Mr. Boser fits his barrel clearance at two and one-fourth thousandths of an inch. For over 40 years I have been setting barrels back to the cylinder. Several years ago I got hold of one of your first .45 Colt Single Action Model-1870. I fitted the barrel gas-tight and have fired 60 blackpowder loads in it without a hitch. There was no lost gas at all. As for Mr. Boser's bolt improvement, its worse than nothing. His main spring is no improvement on a gun of that type. As for the hand and hand spring, old famous artisans including Col. Colt, had the hand action and spring all figured out and left no room for improvement.

"I only know of two very inexpensive small changes that could be made on a Colt Single Action. If the wings on the bolt or cylinder stop were slightly tapered and the crotch cut round instead of a square cut, and if the trigger was bent back toward the guard so it would just release the hammer fall, it would greatly improve most people's accuracy. On my own personal revolvers I always bend the trigger back, though I could shoot fairly well with any trigger, as I knew enough to put pressure on my other fingers and thumb while squeezing off a shot. However, if the trigger just releases the hammer fall and no more, it permits finer accuracy.

"I got my first Colt Single Action in Denver, Colorado, over 40 years ago. I carried it 13 years. Set the barrel back to cylinder after I had it a few months. I did not carry this old Colt for fun or a pretty thing to look at. It got me out of many a very tight jam. Never had to get any new parts for it

either and it was old when I got it in Denver. Incidentally, the Colt Single Action and Smith & Wesson Russian Model "Single Action" also, were the fastest pistols ever built. For real speed these two guns never had any equal.

"I don't claim to know too much about firearms, however, both sides of my Father's house happened to be blacksmiths and gunsmiths. The Milliron's came from Ireland about 200 years ago and built a lot of rifles during the Revolutionary War. Since then there has always been a Milliron gunsmith. I am probably one of the last, as I am over 60 years old. The other side of father's house were Scotch-Irish. Freas & Freas also could build a flint lock.

"I don't claim to know anything about modern weapons, and as I mentioned in the first place all this is none of my business, only it makes me feel bad when some fellow trys to show up those old famous gunmakers. Such men as Col. Colt, The Wesson Bros., Elijah Roote, Ely Whitney, Winchester and Remington. Col. Colt had more brains than a dozen of these modern smiths."—*Charles C. Milliron.*

No. 2. "In reply to your appreciated letter, I am pleased to note that you were interested in my few remarks relative to your famous Single-Action Army revolver. You are perfectly at liberty to send my letter to the RIFLEMAN or elsewhere. However, as I am a poor writer and speller, I would suggest that you typewrite and edit it. It will be O. K. with me.

"I might add a few more remarks in passing. Several times I have noted in the RIFLEMAN what a fine gun the old Sixshooter could be if it were not for three or four "if's." Unbreakable springs, the hammer was far too heavy for fine accuracy, the hammer fall or sweep was far too long, the heavy hammer knocked the pistol out of line at the time of or just before powder ignition and the fact is that the detonation or explosion of the primer or cap is so much faster than the hammer fall that the hammer does not hit the frame at all. The same is true of the old percussion lock arms. With good caps the hammer never hit the nipple at all. The fulminate is so fast and powerful in a long revolver load that it shoves the bullet and (blackpowder) well into the barrel before much pressure is developed. The long hammer sweep in no way slows up the time of firing. When the hammer is racked back a man's hand is in an uncramped natural position to drop his thumb down on handle. For the second shot on the remaining five loads when the gun recoils, barrel up in the air, the hammer spur is in the proper place to grasp, cocking revolver on downward motion. Unbreakable layer two and three plys, springs, locomotive frame springs, buggy and layer carriage springs very frequently broke, so how could they be unbreakable in a revolver. I have seen one broken main spring in a very old Colt, only one.

"For balance and natural feel and fit to one's hand the old Colt Single Action Army cannot be improved on. I have shot two Colts and one Smith & Wesson target revolver, but done my best shooting with just a plain old Sixshooter, common sights and trigger pull. There are people still living that have seen me shoot 6 shots in a one inch group at 20 yards with either left or right hand in not over 10 seconds. This was not done with a new revolver by any means. In fact, I have done real neat shooting at 70 yards with an old Colt that had seen plenty service.

"Several years ago I wrote you gentlemen about a test I made to find out how powerful an old Colt S. A. was. I set the 5½" barrel back on an old U. S. .45 Colt S. A. Army. I was shooting 40-grain Remington blackpowder loads. These loads shot 950 feet per second. The old Colt shot through 2½" to 3" of good solid oak. I had with me a very powerful .44 revolver to use as a templet or comparison. The powerful .44 only penetrated around 1½" to 1⅝". This penetration test with the very powerful .44 S. & W. Russian and old .45 Colt U. S. S.A.A. was made at 15 feet from muzzle, into red and white oak very hard, tough wood.

"I have made a study of revolvers for over 40 years, and find that Col. Samuel Colt, Elijah Roote and Ely Whitney left mighty little room for improvement."—*Charles C. Milliron.*

TRADE DOPE

Willard C. Smith, of Bausch & Lomb, goggle division, is leaving that job, as of May 28, for his Navy job as an Ensign. The last news he gave me is that W.P.B. ordered the stoppage of metal frames for sunglasses as of May 23. That means B. & L. is out of the shooting goggles business until after the war when they will probably continue to make the Army-Navy goggles for civilian shooters. Willard says we can look for some new models at that time as well as new products and a better service from the optical profession through an improved understanding of prescription requirements for shooting problems.

* * *

George O. Bayer of Walla Walla, Washington, says his firm continues to remodel M-1917 rifles and rebarrel Mausers to .30-'06 caliber and M-99 rifles to .300 Savage caliber. We are glad to learn of the availability of such gunsmith service in these times. His latest list shows many additional services on safeties, bolts, actions, sights, etc.

* * *

Colt Historical Prints are beautiful and every handgunner should have a set. The factory says they are yours if you send two-bits to Hartford. These lithographs, 14 x 11 inches, designed for framing, include the first Colt standard model, the Texas Paterson of 1836, also the Walker Model of 1847, the Wells Fargo Model of 1848, the Navy Model of 1851, the Army Model of 1860 and the Peacemaker of 1873.

* * *

C. C. Johnson announces his Thackery shop will be closed to barrel or relining work beginning May 10, which marks his new industrial duties in vital war work. He will continue to conduct his business on Red Head reloading tools, evenings and week-ends, as long as material can be obtained.

* * *

In Defense Work. Chas. M. Holden, whose gunshop at Weston, West Virginia, specialized in remodeling military rifles, advises us that his place of business will probably be closed for the duration. He has been engaged as a machinist in a Goodyear Aircraft Plant. Mr. Holden says that anyone who wishes to do so may reach him at 526 Sieber Avenue, Akron, Ohio.

New Catalog of fifty pages, illustrated, has been issued and published by South Bend Lathe Works. Ask them for No. 100-C. This neatly bound book describes the entire line of the makers' engine lathes, toolroom lathes and turret lathes in several sizes, each being pictured and described as well as attachments and accessories. Also, the various different specifications are tabulated. It is of letter size for convenient filing. Free!

* * *

Rubber Booklet of forty pages has been issued by the United States Rubber Company. It is of letter size, stapled and illustrated. It tells the history of synthetic rubber and the story of the five commercial types. It was compiled for the sales engineers but it can be had free from the United States Rubber Company, Synthetic Rubber Division, 1230 Sixth Ave., New York City. It is very informative and complete in coverage, and I consider it a real find.

* * *

E. L. Eimer, "Pop" to you, who does more tricks in converting odd calibers than any gunsmith of whom I have ever heard, says he will move soon to 817 Maiden Lane, but this will not take him away from his well-known haunt of Joplin, Missouri.

* * *

Gun Cabinet Plans. Sooner or later, almost every hunter or fisherman wants a cabinet in which to store his guns, fishing rods, side arms and ammunition behind locked doors. Now that many sportsmen expect to lay aside their guns and rods while in the military services or engaged in wartime civilian work, it is very timely as a service that the Western Pine Association of Portland, Oregon, has just issued an excellent plan of a Sportsman's Rod and Gun Cabinet.

The plan gives construction details of a cabinet 70 inches high, 34 inches wide and 16 inches deep, over-all. This piece of furniture is a two-compartment affair with capacity for a 5-gun display visible through a glass panel in one of the doors. It also has a wardrobe to hold coats, caps and boots. Below the display section are a shallow drawer for side arms and twin drawers for cleaning oil, tools and boxes of shells and cartridges. On shelf space below the wardrobe a metal tackle box, creel, minnow pail, thermos jug and thermos bottles may be kept.

A person who has home workshop equipment or is handy with tools can make the cabinet easily from the directions that are given; but if time or ability are lacking, the simple thing to do is to get a copy of the plan and have the cabinet built by a local woodworking plant. The plan, known as Instruction Sheet No. 20, will be supplied free if the request is addressed to Western Pine Association, Yeon Building, Portland, Oregon.

* * *

Gunsmiths Attention. If you can still furnish your services in repairing and remodeling firearms please tell us what you can do so we can tell our members. The Dope Bag receives requests for such services every day. We cannot utilize these opportunities of telling about you unless and until you tell us. Write the Dope Bag about your available services to shooters even if you advertise them in the Arms Chest. Don't forget to give us particulars about the work you can do.

FREE!

Send Coupon for Your Copy of This Interesting Handbook of the H & R Submachine Gun

Model 55
H&R Reising Submachine Gun

The Manual of the Harrington & Richardson Reising Submachine Gun—a compact 48-pages of facts, photographs, drawings, and data—is now available *free* to men and boys interested in firearms.

This H&R Reising Gun—Harrington & Richardson's principal product for the duration—is the one that's being used with such telling effect by the U. S. Marines. The Manual illustrates and describes in full detail its parts, functioning, disassembly and assembly, care and cleaning, uses and advantages . . . all red meat for gun-hungry readers. And by inference, this story of the superior H&R Reising Gun gives the reader a clue on what sportsmen may expect of H&R's *new* post-war line of sporting arms.

WRITE TODAY for your free copy. Use the coupon if you wish. Harrington & Richardson Arms Company, Worcester, Massachusetts.

HARRINGTON & RICHARDSON

HARRINGTON & RICHARDSON ARMS COMPANY,
Dept. AR-6, Worcester, Mass.

I'd like to have a free copy of the H&R Reising Gun Manual.

Name .....

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.....

THE ARMS CHEST

The Arms Chest is an open market trading post where manufacturers, distributors, purveyors of professional services, and our own readers may cry their wares to fellow sportsmen at a modest cost. Returns are uniformly excellent—scores of advertisers have reported truly phenomenal results.

Advertisements are accepted from annual and life members of the National Rifle Association, *for personal transactions exclusively*, at 8¢ per word INCLUDING NAME AND ADDRESS, minimum charge $1.20. For all *commercial* advertisements the rate is 10¢ per word INCLUDING NAME AND ADDRESS, minimum charge $1.50.

Groups of figures are computed as one word. Spell out all descriptive words; abbreviations may lead to serious misunderstandings and thus impair the effectiveness of your ad. Non-specific phrases such as "highest prices paid," and "top prices paid" are objectionable and cannot be accepted; the terms "fair prices paid," or "state price wanted" are acceptable. A *specific* price must be stated on all *for sale ads*. Box number or blind ads will not be accepted. Please give your *complete* name and address, so as to insure the prompt delivery of all mail or telegraphic replies. All advertisements *must* be accompanied by cash. Final closing date is the 5th of the preceding month. *Please print all advertisements plainly*—we cannot be responsible for errors due to illegible writing.

In describing the *condition* of guns advertised these standard phrases must be used: *Perfect* means factory condition. *Excellent* means new condition, implying negligible amount of use. *Very good* means practically new condition, implying little use, resulting in no appreciable bore wear and only minor surface scratches or wear. *Good* means moderate use with some finish worn off, only moderate bore wear with no pits and nothing worse than a little roughness in the bore. *Fair* means reasonably hard surface, reasonable wear inside, nothing worse than minor pits in the bore, implying the gun is sufficiently accurate for hunting. *Poor* means marred appearance and pitted or badly worn bore.

Deliberate misrepresentation will, of course, result in expulsion from N. R. A. membership.

FEDERAL EXPLOSIVES ACT

Under the Federal Explosives Act of 1941 *all* buyers, sellers and possessors of powder and primers (not complete small arms cartridges) must be licensed. Such license is usually obtainable from your County Court Clerk. Purchasers must submit their license, or a certified or photostat copy therof, to the seller at time of sale.

MEMBERS EXCHANGE

A quick, inexpensive medium for disposing of guns and accessories no longer needed, or for the purchase of more suitable similar items. We urgently request that a full description be given of every article offered, and its *condition* (see complete instruction above), for transactions of this sort must be based entirely on good faith and mutual satisfaction. Deliberate misrepresentation will of course result in immediate expulsion from N. R. A. membership.

Purchasers who wish to examine, before acceptance, guns or equipment purchased thru these advertisements should request shipment by express, C. O. D. *with examination privileges.*

FOR SALE

THE REVOLVER TIMING RECORD. A 10-inch RCA-Victor phonograph Record. Practice timed and Rapid-Fire anywhere, by yourself. Nothing to watch—just listen. For "dry" shooting basement and outdoor ranges. One side 10 second timing, other side 20 second timing. Plays on any phonograph, $1.50 postpaid. The Original Sight-Exchange, Box J, Paoli, Penna. 1-44

LATE H. B. WALNUT HILL, EXCELLENT, 17A front, Lyman extension rear, sling, $50.00. Winchester Scope, 1½" 15X Litschert attachment, Marlin ¼ minute click mounts, very good, $45.00. M. V. Coddington, Tipp City, Ohio. 6-43

WINCHESTER LOW-SIDE .22 LONG RIFLE, Model 37 Remington barrel. Super-accurate, good custom stock, balance excellent; Winchester high-side .25-20, nickel steel, excellent, $40.00 each. Winchester high-side, .22 Super-Lovell, scope stock, excellent, $50.00. Fair Krag, $20.00. S. L. Pierson, Box 1007, Oklahoma City, Oklahoma. 6-43

LARGE STOCK OF AMERICAN AND European Antique Arms. Send 10¢ coin for latest 9th edition catalog, featuring the important Dr. Buck collections. Antique arms wanted. We buy single pieces or whole collections. Fair prices paid. Kimball Arms Co., Woburn, Mass. tf

Magazine Delivery

Your AMERICAN RIFLEMAN may be delivered to you several days later than to subscribers in other sections of the country.

In spite of our careful mailing schedule there is a spread in delivery of approximately four days caused by circumstances entirely beyond our control.

This situation will most likely continue during the war and we earnestly request your patience.

22" DOUBLE PIN FIRE 12, GOOD, 60 PRIMED shells, $20.00: .38 S. & W. Hammerless, 4", serviceable, 90 cartridges, $25.00; B. & L. Type EE Binoculars, $45.00; Silver Key Wind Watch, $12.00. L. O. Peterson, 1616 N. 15th, Lafayette, Indiana. 6-43

REMINGTON 51 .380, FINEST POCKET GUN made, perfect condition, $50.00. Another, perfect inside, bluing worn, $35.00. Colt Bisley .44 Special No. 239336, perfect inside and very good condition, $50.00. Sedgley Winchester 88, S. S. Hornet, scope blocks only, very good and accurate, 100 h.p. and 200 shells, $75.00. Goerz 6 X 30 Marine Triedor, central focusing, old heavy model but perfect optically, $50.00. E. Von Hofe, Universal 4-0 deep sea reel, in case, used two weeks only, $60.00. Also Hardy Deluxe, $30.00 and Thomas rods, $20.00. H. W. Dachtler, 218 Michigan St., Toledo, Ohio. 6-43

M-52, BARREL BY ERIC JOHNSON, HAS 77F, 52 Ext. rear, 8X targetspot, all excellent and better, $155.00. Want trade, what have you? 1000 Match ammunition with gun, $15.00. H. W. Persons, Redding Apartments, Anniston, Alabama. 6-43

ANTIQUE AND USED FIREARMS. SEND 5¢ for list. H. A. Brand, 1008 Ingalls Bldg., Cincinnati, Ohio. 7-43

300 H. & H. 70 BULL GUN, AS CATALOGED, like new, with 450 .30 cal. bullets .180 grain, 275 primed cases, 500 8½ primers, 5 boxes factory shells. Price $165.00, lists around $190.00. Harvey L. Rumaner, 520 Beattie St., Syracuse, N. Y. 6-43

FOR SALE: .30-06 NEWTON, REGULAR OR SET trigger, very good, $45.00. Winchester 12-12 barrel only with Poly Choke, excellent, $26.00. Fred Heyen, 814 N. Champa, Pratt, Kansas. 6-43

FOR SALE: VERY GOOD MODEL 70 HORNET with Weaver 355 Scope, rigid T-2 mount, new sling and two boxes factory ammunition. All for $70.00. Cecil H. Kelley, Rockwood, Tennessee. 6-43

FOR SALE: K22 KING SUPER TARGET, VENTIlated rib, cock-eyed hammer, red reflector front, micrometered click adjusting rear sights, hand honed action, Roper grips, excellent to perfect; 500 long rifle shells. Express collect first money order $90.00; also model 94, .32 Special, quick detachable swivel, Redfield Hunter receiver sight, gold front, stock checkered, excellent in and out, with 60 factory loads. All for $50.00 first money order, express collect. Fred C. Rozelle, 443 Congress St., Portland, Maine. 6-43

S. & W., .22 LONG RIFLE TARGET REVOLVER, six inch barrel, target sights, target grips, hand finished action, perfect condition, $50.00. Dr. C. A. Pfafflin, 445 Bankers Trust Bldg., Indianapolis, Indiana. 6-43

FOR SALE—USED GOVERNMENT RIFLE sling strap, 1¼" width, 50¢ each, Swivels at 65¢ pair. Job 25 Automatic cartridges, these are not guaranteed, $13.50 per thousand. .45 caliber Automatic Cartridges, $6.00 per hundred. No C.O.D. orders. Passon Sport Center, 507 Market Street, Philadelphia, Pennsylvania. 6-43

.224 KRAG LIGHTNING (BY RISLEY), WINchester HS, Speed Hammer, Mannlicher-Neidner Pin, DS Trigger, Blocks, Tools, 180 Cases, 450 rounds Components, excellent, $140.00, stamp for details. R. R. Sherman, McLean, Virginia. 6-43

WINCHESTER 12 HEAVY DUCK, 32 FULL, EXcellent in, blue worn, stock scratched, $65.00; Remington Automatic, 12, 28, Rib, full, pad, excellent, blue worn, $50.00; S. & W., Hammerless, 38, 4, nickel, pearl handles, perfect, 2 boxes shells, $35.00; Barrel, Remington Automatic Trap, long range, 28, full, perfect, $20.00; Ideal loading machine 12 gauge, #2 receiver, with shell resizing die, perfect, $15.00; Ideal Tool #4, 32-20 with shell resizer, perfect, $5.00; Case 12 gauge trap 7½, $36.00. C. E. Spurrier, Green, Kansas. 6-43

12 BROWNING O. & U., SELECTIVE TRIGGER, Automatic Skeet, $80.00; 16 Fox Automatic, Skeet, $60.00; Winchester Hornet, single set, $30.00; Winchester 2R Lovell, single set, Components, $45.00; 45 S. & W. Army Model, $27.50; Ideal .30-'06 reloading tools, $5.50. W. B. Ivey, 1135 Miami Road, Jacksonville, Florida. 6-43

.45 COLTS AUTOMATIC GOVERNMENT Model 1911, brand new barrel, mechanically perfect, appearance V.G., two extra magazines, 40 cartridges, with flap holster, $67.50. Smith & Wesson, spur trigger, 32 break open, bird's head grip, $18.00. H. & R. and similar .32 and .38 calibre solid frame revolvers, serviceable condition, $12.50 each, same in break opens, $17.50 each. Smith & Wesson .32 S. & W. Long, side ejector, six inch barrel, perfect, $45.00. H. & R. dog trainer's pistol, brand new, 100 .22 short blanks, $12.50. Cased S. & W. .32 rim fire, six inch barrel, V.G., $15.00. .45 caliber Colt New Service, fair, $32.50. 41 Remington Derringer, serviceable, $13.50. Smith & Wesson Regulation Police, .38 S. & W. nickel square grip, 4¼" barrel, V.G., 50 noncorrosive cartridges, $40.00. 41 Army Special, six inch barrel, V.G., 100 noncorrosive cartridges, $39.50. Smith & Wesson Regulation Police, .32 S. & W. Long, 4¼ inch, blue square grips, 50 noncorrosive cartridges, excellent, $42.50. 41 Colt Single Action, 4¾ inch barrel, 100 noncorrosive cartridges, poor but serviceable, $15.00. Colts .380 Automatic, latest model, very good, $35.00. Steyr 9mm Military, excellent, very scarce, $50.00. Smith & Wesson Military and Police, 4 inch, .38 Special, mechanically perfect, appearance V.G., with 50 noncorrosive cartridges and Audley holster, $57.00. Steyr .32 Automatic, N. Pieper patent with 21 cartridges, noncorrosive, $37.50. Send check or money order to: Frank A. Efinger, 425 E. Main Street, Bound Brook, N. J. 6-43

New Classified Rates!

Effective with the August issue of THE AMERICAN RIFLEMAN the rate for all classified advertising will be ten cents per word, including name and address, with a minimum charge of $1.50.

Under existing conditions it is no longer possible for the Association to continue the special member's rate of eight cents per word, originally established for N. R. A. member's personal advertisements.

The present volume and scope of classified advertising makes it impossible to draw the line between personal and non-personal ads and we believe that the fair arrangement is to charge a uniform rate as is the custom with other publications. Rising publication costs make it advisable to establish this rate at ten cents per word in order to prevent loss to the magazine.

In order to further streamline the Arms Chest to meet present demands, the "Member's Exchange" and "Trading Post" classifications are being discontinued and all ads will be classified by subject only.

NEW 20 GAUGE MODEL 31 REMINGTON PUMP, 26" barrel, improved cylinder, original carton, $56.70; New .22 L. R. Model 63 Winchester Automatic, original carton, $45.00; Model 64 Winchester 32 Special, 24" barrel, sling, excellent, 35 shells, $60.00; Fox Sterlingworth 12 gauge, 28", Modified & Full, excellent, $40.00. John Hailey, 662 Central Avenue, St. Petersburg, Florida. 6-43

$1.50 EACH. SPRINGFIELD RIFLE BARrels. 30-06 Caliber. Second Hand. Limited supply. We buy defense merchandise. Optical goods, Boat supplies. Fire Arms. Any quantity. Pay cash. Weil's Curiosity Shop, 12 Strawberry St., Philadelphia, Pa. 6-43

FOR SALE: WINCHESTER 52-B, H.B., EXCELlent, Smith trigger, Vaver sights front & rear, $100.00. WANT—Winchester 70, .220 Swift and Cases; Remington Model 241, .22 L.R. Auto. J. G. Woods, Box 211, Lincoln Acres, San Diego County, California. 6-43

.45 COLT AUTO, EXTRA STAG GRIPS, VERY good condition, my name engraved on slide, Heiser 724 swivel holster, Heiser cartridge belt, 275 cartridges, two spare clips with carrier, $75.00; 4½" Woodsman, 500 L.R. Kleanbore, Heiser No. 7 holster, both excellent, $75.00; .22 Marlin lever action, Ward 4X scope, sling, 500 shorts, very good, $40.00; Winchester 62, very good, 500 shorts, $32.00; Ward 12 Gauge Pump, very good in, good out, 5 boxes shells, $32.00; 5 cartons Kleanbore .22 shorts, $10.00 carton of 500. Paul Brouillette, 206 E. Maple, Washington, Indiana. 6-43

WINCHESTER, MODEL 53, .25-20, INSIDE EXcellent, outside good to fair, 50 cartridges, 80 empties, 200 sixty grain hollow point bullets, full set Ideal Reloading Tools, $35.00. R. Kruckemeyer, Pleasant Plain, Ohio. 6-43

KILBOURN-HORNET, DEADLY ON chucks and crows. 3,000 F.P.S. velocity with 45 gr. bullet, 2,900 F.P.S. with 50 gr. Your Hornet rechambered, $5.00. Magazines altered for long bullets. Winchester, Savage, $2.00. Lysle D. Kilbourn, New Hartford, N. Y. tf

.45 CALIBER COLT SINGLE ACTION REvolver, holster, etc., $35.00, ammunition extra @ 5¢; Model 95 Winchester .30-03 Rifle, 22" barrel, $35.00; D.W.M. .30 caliber Luger, 4" barrel, $35.00, ammunition extra @ 6¢; Model 94 Winchester, .32-40 Rifle, 20" barrel, with 60 rounds fresh ammunition, $40.00; WANT—U. S. Rifle 1903, .30-06, must be exactly as issued, serial number, if Springfield, over 800,000; if Rock Island, over 285,507. Prefer National Match, excellent to perfect. Wm. M. Abbott, Box 185, Wilton, N. H. 6-43

COLTS OFFICERS MODEL .38 SPECIAL, 6 INCH barrel, Murad stocks, excellent inside and out, $60.00. E. D. Benton, 1886 Rutherford Ave., Louisville, Kentucky. 6-43

WINCHESTER MODEL 12, 20-28" MODIFIED, excellent, 18 boxes shells for same, mixed sizes 6 to 8½ chilled, not sold separately, $100.00. Colt Frontier .38 Special, new barrel and cylinder, otherwise very good, 1 box shells, $50.00, .22 caliber Targo Gun, smooth bore, special choke, Western Field, new, 8 boxes shells, one case targets and hand trap, $30.00. .22 caliber Western Field (Savage make) Automatic Rifle, 15 shot, operates either as single shot, bolt action repeater, or automatic, plus scope, $40.00, excellent. Will consider trade of any of above for complete Winchester 70 Hornet, excellent or better, including loading tools, primers, etc. C. Edgar Wood, Milford, Delaware. 6-43

WINCHESTER MODEL 1886, CALIBER 40-82 IN new factory condition, never used absolutely perfect, beautiful case hardened receiver, new set Winchester tools, 40 rounds ammunition, $45.00 buys the outfit. Ernest W. Hicks, R.R. #2, Grand Junction, Colo. 6-43

FOR SALE: FINE COLLECTOR'S PIECE. POPEStevens Schuetzen .22 Short Gallery Rifle, excellent to perfect, 44½ action, Harry Pope octagon barrel. Scope blocks, Vernier tang and Vernier front sights, double set triggers, Pope finger lever trigger guard, palm rest. Fine Circassian cheek piece stock and fore-end. All original condition and superbly accurate, leather case, $95.00. Gerald Cross, Lathrop, Missouri. 6-43

37 REMINGTON, EXCELLENT, VAVER SIGHTS, 1700 cartridges, $85.00; M70 Heavy Ackley Lovell, $85.00. 1800 primers, bullets, tools, etc. Sale only to buyer of rifle. B. & L. drawtube, Freeland stand, $32.00. 1" Unertle 8X, good, $50.00. Other items, send stamp for list. J. C. Jarvis, 1856 Palmwood Ave., Toledo, Ohio. 6-43

TWO REMINGTON 4½ INCH BLADE hunting knives, with sheath, brand new, $9.00. 8mm Mauser Model 98, Redfield micrometer rear, hooded ramp front, 23 inch barrel, excellent, $67.50. Weaver 330C, Xhair, brand new, factory box, $32.50. 100 rounds 32 Remington Automatic, 165 grain, soft-point, $14.50. 60 rounds 401 Winchester, self-loading, 250 grain, soft-point, $9.00. 250 rounds 32 Winchester, S.L.R. 165 grain, soft-point, $15.50. All cartridges noncorrosive. Send check or money order. Frank A. Efinger, 425 East Main Street, Boundbrook, N. J. 6-43

The Weaver model 330 scope you know so well is

DOING ITS BIGGEST JOB NOW!

• Hunting is a lot of fun, especially if your rifle is equipped with a Weaver Scope. But today there's grimmer hunting assigned to the Weaver 330—hunting that's going to clear the world of human vermin that interfere with our way of life. Our snipers are depending on the clear vision, the sturdiness, and the light weight of the *Weaver*—the very features that made it so fine for game hunting. Wish them luck—and good shooting!

★ WEAVER ★

Scopes and Chokes

Made in EL PASO, TEXAS *by the* W. R. WEAVER COMPANY

While all the facilities of the Weaver plant are today devoted to war work, many dealers still have Weaver products on hand. If you don't find the model you want, write us.

BINOCULARS, CARL ZEISS, JENA. TELAREM, 18 X 50, featherweight, excellent, case, $285.00. Joseph Riotto, 1677 Ocean Parkway, Brooklyn, New York. 6-43

FOR SALE: KRAG 30-40, SPORTER STOCK, Pacific rear, Blade front, good in and out, 2 boxes ammunition, $37.50; with new Weaver 330, $69.00. Marlin lever .30-30, good in fair out, 2 boxes ammunition, $27.50 Extra ammunition for these guns too. WANT—.22 caliber jacketed bullets, stamp please. Frank Foster, Clovis, New Mexico. 6-43

FOR SALE: 7MM MAUSER SPORTER, GOOD INside and out; 29S Weaver scope; T mount; 2 boxes ammunition; #10 Ideal reloading tools; 100 primed cases; $65.00. M. H. Huffman, Dunlap, Illinois. 6-43

THREE BRAND NEW SAVAGE RIFLES MODEL 99EG caliber 300; two boxes ammunition each rifle. Price rifle $61.75, ammunition, $2.00 box. Mark V. Kibbe, Ulysses, Pennsylvania. 6-43

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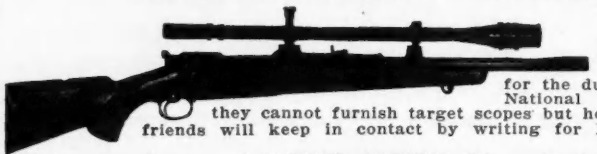

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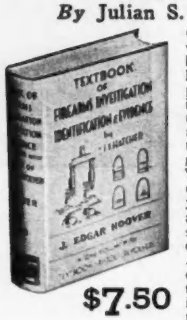

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S. & W., .45, ARMY 1917, VERY GOOD, $45.00. George T. Morgan, Coxsackie, New York. 6-43

WINCHESTER M70, .270 CALIBER, STANDARD grade, Weaver 330 with Stith mount, sling, oil finish stock, fired few times, perfect, $115.00. Precision .270 hand loads, standard velocities: 100 Silvertip 130 grain; 100 mushroom 130 grain; 80 soft point 150 grain; lot $34.00. 250 mushroom 130 grain and 50 soft point 150 grain bullets, $9.00. 300 NMNC primers, $3.00. Savage 23D, .22 Hornet, 29S Weaver with Stith mount, sling, extra magazine, perfect, $60.00. 6 boxes factory ammunition, $10.00. 400 Sisk 35 grain bullets, $5.00. 400 NMNC primers, $4.00. Remington 513S .22 rifle, 29S Weaver with "B" mounts, Redfield #75 receiver sight, sling, extra 10 shot magazine, excellent, $55.00. 1,000 Long Rifle cartridges, $6.00. Above ammunition and components only with guns. Pacific scales and weights, $6.00. Ideal #10 tool with complete sizing and seating dies for .270 caliber, $8.00. Dies complete for .300 Savage, $5.00. Dies complete for .30-'06, $5.00. Ideal full length resizing die .270, $2.00. Bond model "C" tool for .22 Hornet and .220 Swift, complete, $10.00. Stamp for answer please. Fenton Priest, 903 Hanover Avenue, Norfolk, Va. 6-43

MATCH TARGET, SHEEP HOLSTER, PERFECT, $65.00. H. & R., 10", case, excellent, $25.00. Mossberg Scope, case, stand, $30.00. Marlin, '94, .44-40, tang peep, fair, $15.00. Stevens, .22-410, excellent, $15.00. Winchester, 12 gauge, lever, poor, $15.00. .38 Muzzle Loading Rifle, 17 lb., 1¼" Hexed barrel, Ed Faust Recut, $40.00. 2 Springfield, .45-70, Sporter, remodeled, $8.00. Original, $2.50. Winchester low action .22RF, $5.00. 10 gauge, double, fair, $7.50. WANT—Crossman .22, Webley Senior, 52 standard, Free Pistol M70-220 Swift, Detective Special, stamp please. Charles Marine, 1517 South Branson St., Marion, Indiana. 6-43

NEW RIFLING MACHINE, WITH LAPping machine, $1100.00. Photo 10¢. A. Hubalek, 1167 Myrtle Avenue, Brooklyn, N. Y. 6-43

10 CASES 12 GAUGE SHUR SHOT, 3 DR., 1⅛, 9 shot, $34.00 case. 1 case 12 gauge brush load, 8 shot, $25.00 case. 1 case 16 gauge brush load, 8 shot, $23.00. 1 case 12 gauge New Club, 8 buck, $15.00. 20 boxes 25 Remington K. B., $2.50 per box of 20. 20, .25-35 Winchester Super Speed, $2.00. .45 Colt Automatic, plated, good inside and out, plain wood handle, 65 loads, $55.00. New Guns: 3, .250-3000 Savage E. G., 20 loads @ $73.50. 4, 300 Savage 99 E. G., 20 loads @ $73.50. 2, Remington Model 81, .35 caliber, 40 loads @ $100.00. 2, Remington Model 141, .30 caliber, 40 loads @ $84.00. 2, Remington Model 141, .35 caliber, 40 loads @ $84.00. Savage 23C, .32-20, $47.00. Savage 23B, .25-20, $47.00. R. T. Anselin, 1719 Dunlavy Street, Houston, Texas. 6-43

$5.00. NEW GOVERNMENT FIBRE DESK Trunk with partitions and lock. Suitable for medical officers especially. Cost $30.00. Weil's Curiosity Shop, 12 Strawberry St., Philadelphia, Pa. 6-43

DISPOSING OF ALL MY TARGET RIFLES, pistols, revolvers and shooting accessories, also fishing tackle and cameras. Enclose stamp for complete list. Fred Freshman, 1330 Baltimore Avenue, Kansas City, Missouri. 6-43

FOR SALE—W70 SWIFT, 48 SIGHT, SHOT 24 times, excellent, 48 factory loads, $90.00. Springfield Sporter by Stoeger, Redfield 70, excellent, 4 boxes ammunition, $88.00. OM Colt .38 Special, Roper grips, 500 hand loads, excellent, $80.00. Lyman Jr. Targetscope, 8X, extra eye piece, perfect, $62.00. B. & L. Spotting Scope, NRA, complete, perfect, 19.5X, $68.00. See other advertisement for trades. T. Gies, Hastings, Michigan. 6-43

WEAVERS 330-S AND 29-S, NEW, $30.00, $13.50. WANT—.25-20 single shot nutcracker tool. Also Model 70, .250-3000 or .257. Sam Ellis, Longview, Washington. 6-43

NATIONAL MATCH, .45, KING SIGHTS, CASE, perfect, 1,440-'33 and 350 Peters, $175.00. Light barrel Woodsman, very good, $25.00. Long Rifles, $10.00 carton. M. G. Watts, 5627 Euclid, Kansas City, Mo. 6-43

KRAG CARBINE, VERY GOOD, $25.00. KRAG Rifle, very good, $25.00. Hi Standard, HE, 4½", excellent, $50.00. Marlin 39, tang peep, excellent, $25.00. Fecker Small Game Scope, 10", excellent, $35.00. Winchester 94 Carbine, .30-30, very good, $30.00. Colt New Service .45 Revolver, 7½", excellent inside, $45.00. Remington 24, .22 short, bore excellent, $15.00. Winchester .25-20, half magazine, tang peep, special stock, excellent in, very good out, $35.00. Remington M11 Automatic 12, full, perfect, $65.00. Capt. Frank Jury, Raritan Arsenal, Metuchen, N. J. 6-43

BUESCHER ALTO SAXOPHONE, SILVER plated, beautifully engraved, $95.00, including case and Rockwell folding music stand, cost $150.00. Grant Pierce, 64 Alumni Ave., Providence, R. I. 6-43

WONDERFUL PAIR ELK HORNS, $30.00. Handsome pair Deer horns, $10.00. Large stuffed owl, $10.00. 4 nice powder horns, $6.00. Huge Indian axe, $5.00. Virginia Musket from Gettysburg Battlefield, $10.00. Also 10 bullets and cartridges, $3.00. Authentic. Fine violin, $60.00. J. G. Dillin, Media, Pennsylvania. 6-43

REMINGTON 1917, 20 GAUGE, CHECKERED, rib barrel, poly choke, excellent, $60.00. Latest Bishop Custom Stock, finished, fitted to Model 70, good, $10.00. D. O. Pierce, Fulton, Missouri. 6-43

.38 O. M. T., 7½" BARREL, BRAND NEW, $65.00. Charles G. Leasure, Jr., 781 W. LaClede Avenue, Youngstown, Ohio. 6-43

TARGET MODEL 70-220 SWIFT 48J, 17A, SCOPE blocks and sling, new, perfect, fired few reduced loads, $150.00. Old Model 52, fair out, very good in, scope blocks and factory sights, 500 Kleanbore, $45.00. Sport Woodsman, 4½", excellent, Heiser holster, factory and Murad grips, $60.00. 8x30 Hensoldt Binoculars, sole leather case, individual and central focusing, satisfaction guaranteed, $70.00. Kodal Model B auto-focus enlarger, $40.00. Model 70 stock, no butt plate, $5.00. T. L. Bell, Lexington, Nebraska. 6-43

SELL—BAUSCH & LOMB BINOCULAR, 7X35, factory condition, but needs cleaning. First money order, $85.00. Gerald Taylor, South Royalton, Vt. 6-43

.32 AND .38 S. & W. HAMMERLESS 2" AND 38 Regulation Police 4" with holsters, each $35.00. .38 O. M. T., 6", $55.00. .30 Luger Barrel (in white) 4⅝" and receiver, $10.00. .22 CAP Barrel, 6½" with sight, $5.00. Springfield Bolt, $4.00. Above very good to perfect. .380 Remington and holster, $25.00. .45 SA, 4¾", $15.00. BSA Air Rifle, .25 caliber, $15.00. .38 S. & W. SA old model, $6.00. 5x7 Premo outfit, $14.00. All letters answered. Leo Heimburger, Oroville, California. 6-43

FOR SALE—COLTS OFFICIAL POLICE .38 SPECial, 5", blue with Mershon adapter, perfect, $50.00. W. W. Fowler, Greenville, S. C. 6-43

23D SAVAGE HORNET, PERFECT IN, EXcellent out, Redfield receiver, bead front, barrel band, sling, scope blocks, 100 rounds ammunition, $50.00. WANT—High grade spotting scope. Ray Guthrie, 342 W. Campbell Avenue, Roanoke, Virginia. 6-43

SELL—ONE BOX .351 WINCHESTER SOFT point cartridges, $3.50. WANT—"The Modern Gunsmith" by J. V. Howe. Any quantity .300 Savage and 8.2mm x 56mm Mannlicher-Schoenauer cartridges. Henry Forster, 14-62 154th Street, Whitestone, N. Y. 6-43

FOR SALE—2700 WHITE FLYER TARgets, in cartons of 135, $18.50, F.O.B. Frank A. Efinger, 425 Main, Boundbrook, N. J. 6-43

GREENER 20 GAUGE MODEL F. H. 35, modified and full, stock 14¼"x1-9/16"x2-11/16"x1½" pitch, ejectors, weight 5¼ lbs., straight French walnut stock, silver initial plate, all perfect, leg mutton leather case, side safety independent, plenty of 20 gauge shells, price $300.00. H. J. Ferry, Longmeadow, Mass. 6-43

.38 COLT POLICE POSITIVE, 4 INCH, FIRED only 20 shots, as new except one very slight spot rust on frame, $35.00. 30 Rim-fire pocket revolver, pearl handle, E Remington pat., S. W. Smoot 1873, box and a half ammunition, nickel plating rusted through only few spots, $15.00. Krag 22 inch as issued, well used outside, bore good, two boxes soft points, $19.00. Colt cap and ball converted .22, very good, well balanced revolving mechanism not in adjustment, $9.00. Conrad G. Goddard, Roslyn, New York. 6-43

FOR SALE: BROWNING SWEET SIXTEEN, three shot, improved cylinder, 26 inch, perfect, $80.00. Winchester 37, 12 gauge, perfect, $13.00. Winchester 95 Carbine, .30-40, some bluing off box, otherwise excellent, with Redfield rear, $55.00. Lefever 16 gauge, double, good, $35.00. Above money order only. Springfield National Match made into Sporter. B. & M. Tool and .30-'06 components. Details for stamp. Cecil L. Garner, 194 Phelps Street, Painesville, Ohio. 6-43

KRAG SPORTER, 22" BBL., RICE REAR, RAMP front, scope blocks, 40 new loads, 170 gr. S. P., 20 new empty cases, $30.00. TRADE .22 caliber match ammunition for .25 caliber bullets and primers. Frank Russell, Plainfield, Indiana. 6-43

REMINGTON SPORTSMAN SKEET 20-26, VENtilated rib, $65.00. Winchester Model 42 Skeet Pump 410, rib, $40.00. Both excellent. Sheepskin cases. Smith Field 16-28, good, $35.00. Trade case 12 gauge skeet 9's for 7½'s. Henry Shaw, 76 Westland Road, Weston, Massachusetts. 6-43

COLT S. A. A., 5½", .357 MAGNUM, EXCELlent, $55.00. Another 4¾", very good, $40.00. Perfect Bisley, custom walnut grips, 5½", .357 Magnum, $75.00. Colt S. A. A. and Bisley .38-40, good in, very good out, $25.00. Bos'n J. C. Berger, Sachuest Point, USNTS, Newport, R. I. 6-43

ZEISS ZIELSECHS TELESCOPE, SIGHT 6X with Griffin & Howe 2 lever mount, excellent, $120.00. Money refunded in 5 days if not satisfied. J. Johnston, 825 Paul Street, Gloucester, N. J. 6-43

HAENEL MANNLICHER 9MM. SPORTING Rifle, 28 inch ribbed Boehler barrel, 120 cartridges, $100.00. 1886 Winchester, .33, fancy, cost over $100.00. Cheap at $50.00. Colt .41 Army Special, blued, Colt heavy pearl grips, 5 inch, $40.00. $122 grade Winchester automatic, 12 gauge, $75.00. Warren Baker, 5106 Liberty Ave., Pittsburgh, Pa. 6-43

WINCHESTER SINGLE SHOT, .22 LONG RIFLE, set trigger, pistol grip stock, Swiss butt plate, Lyman peep sights, sling, very good, $35.00. .45-70 Springfield, perfect, $15.00. .44-40 Ideal Reloading Tool, $3.00. 500, Sporting Magazines, 10¢ each. J. K. Shearer, Mattawana, Pa. 6-43

.22 NIEDNER MAG. 52 STD. BARREL ON Mauser action, Jaeger set trigger, Lyman 48 rear, Service stock, 100 cases, 35 primed, 100 bullets, good, $50.00. Would take good Enfield as part, 93 grain Lugar bullets, 50 or 55 grain Sisk or 8S bullets. 512 Remington, fired 25 times, 4 box Long Rifle, $19.00. L. J. Burkett, 204 Wilson Avenue, DuBois, Pennsylvania. 6-43

SALE—WINCHESTER MODEL 94 RIFLE, .30-30 caliber, 26 inch round barrel, $18.75. TRADE—Receiver and some parts for Savage 99, 303. Receiver for Winchester .30-40. Winchester Model 95. All working parts for Winchester Model 94 Rifle. Magazine for 401 Winchester rifle. WANT—Stock and forearm for Savage 99-G. Also receiver and magazine for Krag. A. L. Brause, Box 36, Calpet, Wyoming. 6-43

.22 COLT O. M. T., 6", RECESSED CYLINDER, some blue off, $45.00. Franklin W. Shadwell, 1502a East High, Jefferson City, Missouri. 6-43

70K HORNET LYMAN 48 WITH SCHMITT 24 Tool complete and Wisler Custom trunk, all perfect, a beautiful combination. This complete outfit with primers, cases, powder, bullets and cartridges, $200.00. Stamps, please. Dr. L. P. Bairo, 711 Prof. Bldg., Phoenix, Arizona. 6-43

WINCHESTER 70, .257 TARGET RIFLE, EXcellent, 380 cartridges, 40 empties, 1½ Fecker 20X scope, excellent, accessories, $200.00 takes all. David F. Groves, 609 Fayette Pike, Montgomery, W. Va. 6-43

WINCHESTER 52HB, SERIAL 39705, VAVER barrel band with 17A front, Marble-Goss rear, several extras, near excellent condition, $60.00. WANT—Prism binoculars. Arthur Barnard, Fergus Falls, Minnesota. 6-43

MATCH TARGET WOODSMAN, PERFECT, sheepskin case and 500 rounds of ammunition, $75.00. No checks. R. A. McGoon, Box 1063, Enid, Oklahoma. 6-43

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FOR SALE—BINOCULARS: BAUSCH & LOMB, 6x25, Victory Stereo, in case. Center and individual focus, optically, mechanically perfect, $55.00. Dr. Hudson's Modern Rifle Shooting, $1.50. Reed Forbes, R. D. 5, New Castle, Pa. 6-43

FOR SALE—9MM ERFERT LUGER WITH 75 rounds ammunition, better than good, $45.00. Lt. Earl Herholdt, 2519 Cascadilla, Durham, North Carolina. 6-43

COLT ARMY SPECIALS: 32-20X6", $40.00; 38x4½", $30.00; DA, 38x4¼", $20.00. New Police, 32x6", as new, adapter, 50 cartridges, $45.00. 45 ACP, Issue, latest improvements, extra clip holster, $60.00. High Standards: B, 4¼", holster, $40.00; B, 4½", as new, $45.00. S. & W., 38x6", safety hammerless, pearl, $25.00. English 22x10", SS pistol, $18.50. Heavy Belgian 44-40x6", $18.50. Webley Air Pistol, holster, box .177 pellets, $14.50. New USRA, SS Pistol, $40.00. 25 Astra Auto., 50 cartridges, $15.00. New Remington, 513-S, $45.00. New Remington 37, complete, $90.00. New Benjamin SS Air Rifle, box .177 pellets, $10.50. Stevens 410x410, O&U Deluxe, $20.00. Marlin .22 Hornet 410 O&U, peepsight, $40.00. Winchester 24, 12x28" MF, $37.50. Western Field Deluxe Pump, 12x30", full, pad, $35.00. Ithaca Western, 12x26", bored, 2&4, ST, Lymans, pad, as new, $35.00. Box "B," 16x28", MF, $35.00. L. C. Smith "Field," 20x28", MF, single sighting plane, gold beads, cleaning rod set, $55.00. New tan flap holster, 6", $3.75. Tan flap swivel holster, 32-38 Automatic cartridge belt, $4.50. Sam Browne belt, custom flap holster, 6", 12 cartridges, slide, .38 Special, black, $7.50. Issue 45ACP holster, $1.75. Custom 45ACP left holster, $5.00. Fine 2½x40" cartridge, money belt, $4.50. New Winchester, 32-20 Tong tool, bullet mold, both $7.50. MB straight-line .22 Hornet tool, accessories, $10.00. 2, 45ACP mag. clips, $3.00. Complete .38 Special loading outfit, Ideal tool, DAC, BS, 2 moulds, quantity bullseye, 2000, #108 primers, over 3000 fine empties, most boxed, 300 bullets, sized, lubricated, all $50.00 or best trade offer. H. & R. Super Hand-cuffs, leather case, $12.50. 500, .177 pellets, $1.50. 2000, .25 & .30 caliber gas check bullets, assorted styles, ready to load, 2¢ each, lot $35.00 or best trade. 500 Colt, S. & W. .32 Long, Kleanbore cartridges, $20.00 or trade ammunition, primers. Odd lots ammunition, SP primers to trade. Advise wants, trade offers. WANT—Small, large rifle primers, .22-.25-.30 caliber jacketed bullets, rifle, pistol, shotgun ammunition, any quantity. Need guns, scopes, other articles. Send your articles express paid for fair appraisal, immediate cash, trade offer. List 10¢ coin. Buy, sell, trade. Gordon Joslyn, Member, Greenfield, Mass. 6-43

WINCHESTER 94 CARBINE .30-30, SPECIAL sights, perfect, 87 cartridges, accessories, $60.00; Marlin .25-36 very good, 28 boxes cartridges, empties, $55.00; Smith & Wesson, .38 special, Military & Police, 6 inch barrel, round butt, almost perfect, 282 cartridges, $60.00. Stamp please. Roland Withee, 182 Park Street, Stoneham, Mass. 6-43

OFFERING COLLECTION OF HIGH grade cased double muzzle loading shot guns by famous makers. Also listing some desirable flint and percussion rifles in shooting order. Specify which list wanted. Stamp please. Kimball Arms Company, Woburn, Mass. tf

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S. & W. .38-44 TARGET OUTDOORSMAN; handhoned action; perfect factory condition, new, $75.00. S. & W. Target .45 Colt, 6½" barrel, handhoned action, King ramp reflector front, perfect factory condition, $65.00; 4 boxes ammunition, $6.00. Bisley Colt, .38 Special, 5" barrel, can be easily altered, .357 Magnum, new, factory condition, $65.00. WANT—Fairbanks Scale; 48-50 Gr. Lovell Bullets. A. E. Ellinger, Springwater, N. Y. 6-43

EDDYSTONE 30-06 AS ISSUED, EXCELLENT, 320 rounds 34 & 36 ammunition good, $40.00. WANT—5 or 6 horsepower outboard motor. Wm. M. Crawford, Box 444, Delaware, Oklahoma. 6-43

$4.00 STEEL SAFETY DEPOSIT BOXES, 14 x 14 inches. Double lock protection valuable papers, jewelry, money. Mail orders filled. Weil's Curiosity Shop, 12 Strawberry St., Philadelphia, Pa. 6-43

REMINGTON OVER & UNDER, 12 GAUGE, MODEL .32TC, barrels 30" full & full, ventilated rib, single selective trigger, Hawkins pad, perfect inside, very good to excellent outside, $150.00. Lyman H. Champney, Quarryville, Pennsylvania. 6-43

FOR SALE—52 HB. MARKSMAN STOCK, EXcellent in. very good out, Vaver front, MG52 rear, $85.00, including good trunk. B. & L. Drawtube and stand, excellent, $40.00. Aristocrat coat, 38, and 10X glove, $5.00. 1500 Super Match M2, $20.00. Winchester Model 94, 32 W. S., excellent in, very good out, M. G. tang, $45.00, including recoil pad, sling and 40 rounds. Colt Super .38, standard, perfect in, excellent out, $45.00. H. R. Kell, Newport, Pa. 6-43

FOR SALE—WINCHESTER HIGH WALL R-2 Lovell, double set, high comb, checkered stock, blocks, swivels, 50 cases, 100 primers, bullets, excellent, $60.00. TRADE—#6½ or #116 primers for .250-3000 cases. Ralph D. Baxter, Purcellville, Virginia. 6-43

COLT WOODSMAN, 6½, PERFECT, $48.00. Officers Model .22, $63.00. K-22, $60.00. Both excellent. Colt Ace, very good, with holster, $55.00. Colt .45 Automatic, Colt .45 S. A. Army, S. & W. .45, '17 Army, all good or better, $35.00 each. Send ten cents for complete list of good buys in pistols. Art Miller, Jr., Stevens Point, Wis. 6-43

HENSOLDT-ZIEL-DIALYT SCOPE, 4X, 5-AU reticule with windage. New, factory box, never mounted, $100.00. Smith & Wesson Triple Lock 44 Special, 6½" barrel, new condition, never fired $75.00, extra 6½" barrel for triple lock, new but shelf worn, never mounted, $20.00. George Pace, 3512 Cameron Mills Rd., Alexandria, Virginia. 6-43

FOR SALE—HIGH GRADE 20, 16, AND 12 gauge Belgium double barrel shotguns, perfect, beautifully engraved, fine workmanship, each $75.00. (Set of three $215.00.) Ben Pecker, 100 Wall Street, Bridgeport. Conn. 6-43

WINCHESTER 70, 257 TARGET RIFLE, EXCELlent. 380 cartridges, 40 empties, 1½ Fecker 20X scope, excellent. Accessories. $200.00 takes all. David F. Groves, 609 Fayette Pike, Montgomery, West Virginia. 6-43

FOR SALE—B. & M. TOOL 26, CALIBER 30-06, excellent, $12.00. S. & W. .44 Special Military Target, B. & M. Tool, mould blocks, shells, 500 primers, excellent $60.00. S. & W. 32-44 Russian Target, original case, Ideal Tool, 100 reloads, 500 primers, excellent, $45.00. Enfield Sporter, Lyman 48, 1750 F.A. and 400 N.M.N.C. primers, excellent, $67.00. 393, 172 grain .30 caliber boattail bullets, $15.00. 200 F.A., '33 cases, as new, $4.00. Lyman Tru-line reloading Press. 38 Special and .32 S. & W. long dies, perfect, $45.00. Francis G. McDonald, 713 Lombard, Evansville, Indiana. 6-43

FOR SALE—NEW STEVENS .22-410 TENITE stock. Lyman 55-C rear sight, ivory bead front $24.00 prepaid. New Marlin .22 caliber Model 81 tubular magazine, iron sights, 6 lb., $16.50 prepaid. J. E. Wellington, Box 223, Wellsville, Ohio. 6-43

FOR SALE—B. & L. NRA MODEL SPOTTING scope, Badger stand, excellent, $60.00. S. & W. perfected .22 caliber, 10" barrel, excellent, $28.00. .30 Remington Model 14, 80 cartridges, good, $35.00. Winchester 52, Johnson heavy barrel, Goss rear, Vaver front, also semi scope, remodeled pistol grip stock, also some ammunition, bargain, $100.00. Winchester 52 standard speed lock, new stock, very good, $45.00. Winchester Model 12, 12 gauge, 100 shot shells, $35.00. .30-06 remodeled Eddystone, Bishop stock, Ramp front, reblued, 80 cartridges, excellent plus, $60.00. O. T. Peterson, Jojo Road, Kane, Pennsylvania. 6-43

FOR SALE—MODEL 65 LEVER ACTION, .32 Winchester, brand new, factory box, 22 inch barrel, with 100 rounds non-corrosive ammunition, $62.00. Send check or money order. Frank A. Efinger, 425 Main St., Boundbrook, N. J. 6-43

CHARLES DALY (PRUSSIA) OVER-UNDER 12 gauge trap gun. Elaborately engraved receiver and muzzle, 30" full choke barrels, ventilated rib, single trigger, Greener double cross bolts, new condition, cost $1200.00. SELL—$475.00 accept Griffin & Howe in 257 Roberts or 250 Savage part payment. No other trades. George Pace, 3512 Cameron Mills Rd., Alexandria, Virginia. 6-43

PARKER 10, PHE, EXCELLENT $125.00. LOADS extra. Custom made, Magnum Super Fox, Ejectors, excellent, a beauty, $150.00, 3" loads extra. Over & under 12 gauge Ranger-Marlin, I. C. & M. 26", excellent, $40.00. Lefever, Ventilated Rib, single, trap, excellent, $30.00. Marlin .45-70, Model 1895, New stock & forearm, good, $20.00. Remington Rolling-block, Hornet-Pistol Target sights, excellent, Bore perfect, $40.00. Also same in .44 Russian. WANT—16mm Projector, .32 ACP cartridges, high grade spotter, or rifle scope. Stamp insures reply. Member. H. H. Dean, East 3011 Wellesley, Spokane, Washington. 6-43

FOR SALE—BELDING & MULL 3X HUNTING scope, universal focus, 2 sets of mounts, $50.00. Also 360 never used F.A. 28, 30-'06 cases, $10.00 for lot. E. W. Mange, 307 W. Walnut, Hanover, Pennsylvania. 6-43

LEE-ENFIELD, AS ISSUED, ERA #5402 ON RECEIVER and bolt, caliber .303 British, bore good, outside very good, few scratches on stock cheek, with 59 rounds ammunition, mostly sporting, $42.50. Colt Automatic Pistol Model 1911 .45 caliber, good outside, bore perfect, new barrel, two clips, $40.00. Ammunition .45 caliber A.C.P., Peters 1918 in clips for 1917 revolver, excellent condition, 6½¢ each. 84 rounds caliber .45 S. & W. rimmed case lead bullet 6½¢ each. No shipment made before June 15, 1943, all inquiries answered. Charles Lewin, Wilson Rd., Fall River, Mass. 6-43

FOR SALE—EXCELLENT BROWNING OVER-under, 26" barrels with rib bored 49% and 55% (patterns can be furnished) selective single trigger, Lyman ivory sights, $90.00. Frank R. Wallace, 30 N. Franklin St., Wilkes-Barre, Pa. 6-43

FOR SALE—ZEISS ZIELVIER SCOPE WITH PERmanent mount attached to scope for three barrel combination, $55.00. 18 X 50 Zeiss scope with carrying case, $50.00. Winchester 5A scope, mounts and carrying case, $20.00. TRADE—Remington Model 11, 20 gauge 28", full ribbed and extra 26" IC. Hawkins pad, excellent, trade even for Winchester 12-12 heavy duck gun same condition. W. J. Dawson, Milltown, Wisconsin. 6-43

FOR SALE—ONE 22 L. R. BALLARD, BARREL by Spangler, weight 15 lbs. Walnut stock and forearm Hi Comb. Sling, adjustable sling swivel. Pistol grip made on lever. Gun nearly new, 500 KB L. R. Shells, $70.00. One Model B 22 L.R. Hi-Standard 6¾ barrel, like new, 500 L.R. KB Shells, $45.00, all F.O.B. C. F. Barton, Rainsboro, Ohio. 6-43

REMINGTON ENFIELD SPORTER, BISHOP fitted stock, Redfield hooded ramp front, micrometer rear, Lyman type scope bases, Chromed bolt and new blue by Bishop, perfect in, near perfect out, TRADE for 70-.220. Mauser 8mm. ramp front, folding leaf rear, sling, sporter stock, good out, fair in, M. O. $35.00. Elden Baxter, Davison, Michigan. 6-43

SELL—WINCHESTER PUMP, 410-26, FULL, excellent, $38.50. Savage .32 Auto pistol, excellent, 50 cartridges, $23.00. H.&R. .32 S.&W. 2 inch, nickel, excellent, 50 cartridges, $9.00. BUY—200 rounds 12 gauge, single ball or heavy buckshot loads; Remington Automatic 16 gauge. F. A. Baker, Donnelly, Minn. 6-43

MODEL 12, 20 GAUGE, GOOD, $42.50; BROWNing Auto 12, two barrels, good, $95.00; Diller Winchester musket, special sights and stock, set trigger, make excellent Hornet, good, $35.00. WANT—.250 Savage. W. F. Kennedy, Frankford, Kansas. 6-43

COLT OMT HB .38 EXCELLENT, VERY SLIGHT holster wear, hand honed action, red front, adapter, box shells, swivel type holster, $68.00. R. Slagle, 311 Duluth, Marion, Ohio. 6-43

DELUXE VARMINTER—POWDER, BULLETS, shells, $135.00. Bullgun, Gebby Varminter—powder, bullets, shells, $135.00. Winchester 54, .257 R. Custom stock, 100 factory loads, $120.00. Winchester 62A .22 rifle, 500 shells, $35.00. S.&W. .357 Magmum, 8⅜" barrel, 250 shells, $125.00. Colts Shooting Master .38, 250 shells, $85.00. King Colt's Woodsman, $100.00. 12 gauge Remington Auto—200 shells, $50.00. Winchester 97, 12 gauge—200 shells, $45.00. Winchester Model 42 Skeet—case shells, $90.00. Ranger 12 gauge D.B. S.T. beavertail forearm—100 shells, $38.00. New 12 gauge Lefever, $35.00. Whippet 20 gauge D.B. beavertail forearm—100 shells, $38.00. Late issue .30-'06 ammunition. $7.00 per 100. No postcards—stamps please—all letters answered. Harry Davison, Box 76, New Franklin, Mo. 6-43

FOR SALE—.256 NEWTON, CHECKERED, two triggers, 24 inch barrel, very good, 19 noncorrosive cartridges, $29.50. Western McCrea Master Target Trap, brand new, factory box, latest model, $65.00. Send check or money order. Frank A. Efinger, Main Street, Boundbrook, N. J. 6-43

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REMINGTON-HEPBURN .40-65, HEAVY BARrel, good, $17.50; Springfield .30-'06, fair, $30.00; Savage 99F, .22 H.P., fair, 135 factory loads, 300 bullets and primers, 1 lb. 2400, $47.50; Hi-Standard B, good, extra grips, $22.50; Colt Police Positive .22 L.R., fair, $27.50; Krag ■s issued, fair, $22.00; Remington 37 Olympic front sight, new $8.50; Winchester Hi-Side .32-40, very good, No. 3 barrel, factory ammunition, primed cases, reloading tool, 200 primers, $35.00; Winchester Hi-Side .32-20 Rifle, action very good, barrel poor, $15.00; .22 L.R. target and regular and .45 Colt Automatic ammunition. Prices on request. Send money orders and stamps. All guns shipped express collect. WANT—20 gauge Savage Utility barrel, Pacific powder scales, Jacketed Hornet bullets, Weaver 29S. C. R. Duncan, Seaton, Ill. 6-43

FOR SALE—THE FOLLOWING ARE ALL PERfect: Two .45 1917 S.&W. revolvers, King micrometer click sights, red post front; Magna stocks, smoothed actions, both guns identical; 500 N.M.N.C. large pistol primers with each gun, $75.00 each. One .45 1917 S.&W. regular, never fired, $45.00. 1 .38-44 Outdoorsman, King red post white outline rear, $75.00. One 4½" Colt Woodsman, red post target type front sight, Griffin & Howe target grips, 500 Kleanbores, spotless, $76.00. One Colt heavy barrel .32 Officers Model, Roper grips, 250 Wadcutters (Remington) $80.00. One .270 Winchester by P. O. Ackley, Newton action #350, D.S. triggers, Redfield Jr. base, shot 6 times, 34 rounds ammunition, $75.00. (spotless). One .22 Winchester musket, very good in and out, peep sight, 500 shorts, $30.00. One .22 Reising, bore perfect, very good out, target grips, $45.00. One .22 S.&W. 10" Olympic singleshot, perfect in, very good out, $30.00. One .30-40 Krag, no stock, new Enfield barrel fitted and rechambered by Ackley, never fired, $22.00, no sights; one absolutely perfect, 20 gauge Remington Sportsman, modified, 3 boxes shells, $68.00 (fired twice). One excellent to perfect B.&L. drawtube. Freeland stand, $45.00. Money orders please. Emil McConnell, Route 6, Mine Hill, Dover, N. J. 6-43

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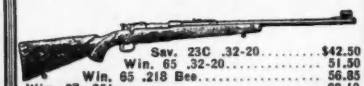

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FOR SALE — WINCHESTER #53 .25-20, 200 shells, $52.00. 1300 Winchester #6, 100 Peters #1½ primers corrosive, $2.80; 65, .32 short, $1.80; 46, .45 Rim Colt black powder $2.20; WANTED—Powder scales, Hornet loading tools, shells, bullets, and 29S Weaver scope. David P. Kain, Eaton, Indiana. 6-43

$1.00 GOVERNMENT ATMOSPHERE SLIDE Rule, used, directions on rule. Cost $10.00. Weil's Curiosity Shop, 12 Strawberry St., Philadelphia, Pa. 6-43

FOR SALE—ONE .30-'06 RIFLE, MAUSER 98 action, 24" Mannlicher barrel, matted rib, Lyman peep sight, blade front sight, cheek rest stock, swivel on barrel only, perfect in, excellent out, $100.00. Winchester Model 54, 30-'06 Lyman 48J sight, standard front sight, perfect in, near excellent out, $75.00. 830 rounds .30-'06 ammunition reasonably late issue, 6¢ each, or trade for .22 L.R. cartridges. WANT—Official Police .22 Colt, 6" barrel, imbedded cylinder, perfect. Earl Gentry, 23 W. 3rd Street, Cambridge City, Indiana. 6-43

GIPSON 7MM. MAUSER SPORTER, BARREL and action only, perfect, $45.00. R. E. Willard, 1736 Summerdale Ave., Chicago, Illinois. 6-43

FOR SALE—GRIFFIN & HOWE .270 CALIBER Mauser, beautiful Circassion stock, heavy semi-ribbed barrel, three leaf folding sights, Lyman 48, ramp front, cost $260.00, like new, price, $200.00. Pre-war Syracuse LeFever Double 12 gauge, 32 inch Krupp Fluid steel barrels F. & F. Auto Ejectors, beautifully engraved, excellent to perfect, stock shows use, cost $350.00, sell for $125.00 Sharps-Borchardt R2 Lovell, heavy John Dubiel barrel, action practically new, reloading tools, 1 inch groups 100 yards, excellent to perfect, cost $110.00, sell for $85.00, with 100 loaded shells. Single Shot Winchester .22 Long Rifle, low side wall, excellent, very accurate, factory fitted 29S Weaver, $45.00. Stevens Single Shot, 44¼ beautifully engraved action, heavy barrel, .22 Long Rifle, scope blocks, beautiful rifle, perfect condition, $50.00. Ballard Pacific Action .32-20 caliber, light weight barrel, scope blocks, Circassian stock, excellent to perfect, $40.00. Smith & Wesson K-22, set $10.00 Mashburn Circassian grips, also factory grips, in original box fired less than 100 times, new and perfect, $75.00. Above guns guaranteed as described. Member. No trades. WANT and will pay cash for high grade double 16 or 20 gauge, preferably Fox, Parker or Smith, describe fully. J. L. Sinnett, Box 551, Owensboro, Ky. 6-43

CUSTOM BUILT .218 BEE, EXCELLENT INside, very good out. Winchester heavy 30" barrel and high side action, Bishop, cheek piece, oiled stock, sling. Winchester 8X scope, Pacific shell holder and dies, 250 new primed cases, 1200 Remington soft point bullets, 1000 Winchester #116 primers, 5 pounds 4227, $147.50. Winchester Model 24, 16 gauge, excellent, oiled stock, 7½ boxes Super-X 6's, 2 Expert, $55.00. 3000 Winchester Leader long rifles, $45.00. Money orders or certified checks only. Lt. A. M. Learned, 86 Oak View Circle, Lafayette, California. 6-43

CONTAX III, SONNAR F/1.2, 5 E.M. ZEISS Jena, Contax everready case, 2 filters, filter adapter, portrait lens, tripod and combination head, Albert automatic easel, 2 large trays, approximately 75 feet film, Eastman precision enlarger equipped for 35mm. camera, 2" f/4.5 Ektar lens 50mm., extra 3" lens; camera slightly used; all other equipment new, $560.00 for complete outfit. .38 Special Smith & Wesson Pistol, stag grips, hand tooled spring shoulder holster, cases, $50.00. 52 Winchester heavy barrel, speed lock, 17A front, Lyman rear, $60.00. Sioux electric drill, $35.00. Officers Model Target heavy barrel, $70.00. Woodsman 4½" barrel, holster, white grips, $55.00. Will trade 108's for 6½ primers. For lists of complete garage equipment and of guns, send 3¢ stamp. WANT—.22 caliber bullets. John Wm. Rush, Box 189, Normal, Illinois. 6-43

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9MM. LUGER, 4 INCH, GOOD, $25.00. MARlin .30-30 repeater, good, $25.00, some cartridges with each gun. Colt D. A. .38-40, 5 inch, good, $25.00. Any gun sent C. O. D. for examination at Express Office upon receipt of $2.00 with order. Also a lot of high power rifle and pistol cartridges @ 5¢ to 6¢ each. We want extra gun barrels, also broken or wrecked high grade guns of all kinds. The Egyptian Gun Exchange, Cambria, Illinois. 6-43

SUKALLE-SPRINGFIELD R-2, 24" HEAVY, checkered Stoeger stock, tapped for Weaver "B," bore perfect, outside near excellent, 150 empties, $65.00. Claude Roderick, Monett, Missouri. 6-43

WINCHESTER 54 HORNET, LYMAN 48, excellent-100 shells, $75.00. New Service Colt 44-40 Franzite Grips, perfect, $42.00. Ithaca 5E Trap F & M Ventilated Rib, excellent $185.00. 2,000, 30-06, 1918 issue, 6¢ each. Model 31 TC, excellent $115.00. Krag remodeled, $30.00. Model 19 NRA Savage 22 Target, perfect, $37.00. 351 Winchester, excellent $65.00, and many more. Send stamp for list. We buy and trade guns and ammunition. Write us what you have. N.R.A. Member, Isetts' Sport Shop, 1309 63rd Street, Kenosha, Wisconsin. 6-43

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FOR SALE—MODEL 70-06 WINCHESTER, LYman Alaskan all weather scope, Pachmayr mounts, sling, white line recoil pad, heavy hand stamped leather scabbard, perfect in, excellent out, fired less than 100 times, $180.00. Selling for friend who is in the Army. WANT—Model 52 H. B. Winchester, also 75 or 37 Remington, "with sights." Must be excellent to perfect. Spotting scope. TRADE—4 boxes, 300 Savage silver tips for late issue .30-'06. John O. Sutton, 10861 Fairbanks Way, Culver City, California. 6-43

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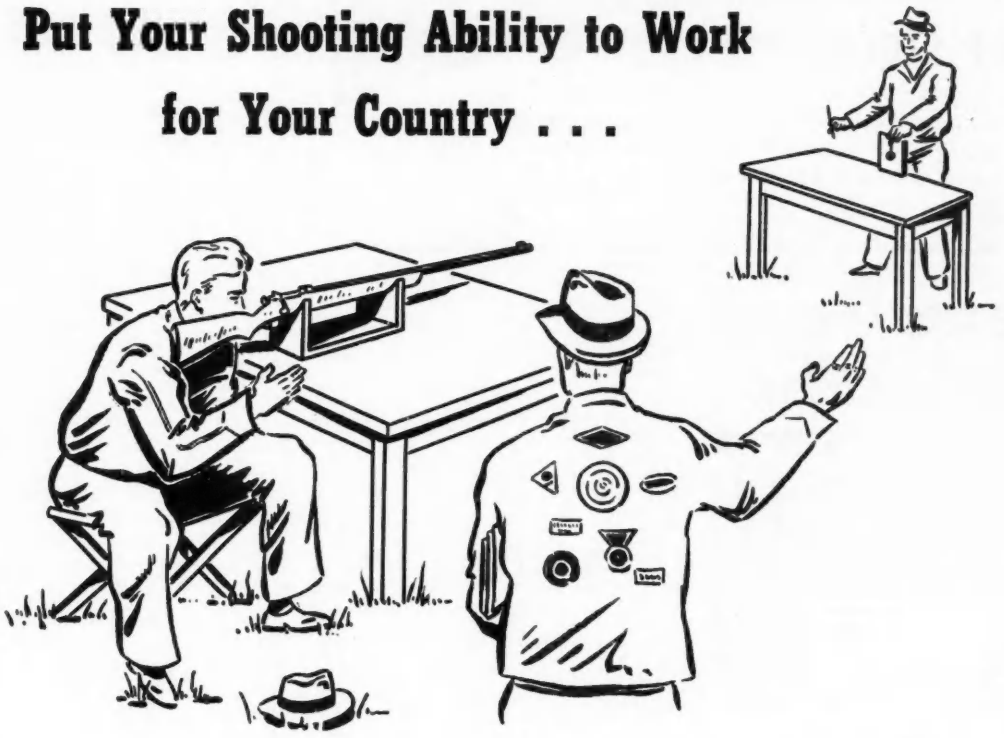

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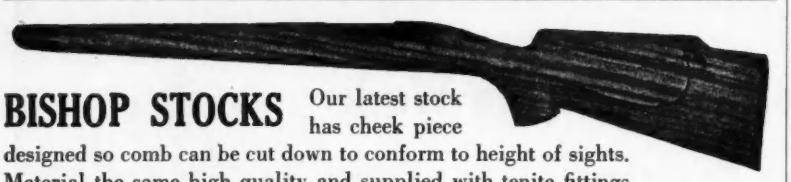

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R2 BY LOVELL, WINCHESTER S. S., #3 RE-lined octagon barrel, Lyman 438, Bishop stock, Pacific dies, 100 components, excellent, $70.00. Robert Allan, Point Lobos, Carmel, California. 6-43

SELL—SAVAGE .250-3000 MODEL 99T. PERfect inside and out. Price $65.00. Dale Walton, Kingsville, Ohio. 6-43

SELL OR TRADE

SALE OR TRADE: REELS: BRONSON #4700, Penn Squider #140; Coxe #10; Pfleuger #1894 and 1495½; Martin #4; Kalamazoo #1691; all new, $65.00. WANTED—Winchester .220 Swift; .219 Zipper or ?. Lester Chamberlin, 140 N. Bowling Green Way, Los Angeles, California. 6-43

SELL OR TRADE: 9MM LUGER, 8", D.W.M., good, $35.00, Iver Johnson, 9 shot, 6", Super shot, factory Reblue, good, $20.00. New Wollensak 20X Telescope in case, $16.50. S. & W., .32, 4" Revolver, Blue, new Holster, good, $35.00. New .32 Spanish Automatic, Blue, new Holster, $35.00. Colt .32, P.P., 2½" new barrel, stag grips, good, $35.00. WANTED—Colt Ace. J. R. Thomas, Brockport, New York. 6-43

BAKER HAMMERLESS DOUBLE, 16 GAUGE, 30 inch, very good in, good out, Damascus barrel gun, collectors item, $30.00 or trade. L. L. Johnson, 4306 Fessenden St., N.W., Washington, D. C. 6-43

SELL ONLY—MARLIN M-90, DELUXE, ENgraved, honed action, O. & U., 20-26, F & M, excellent, beautiful wood, 300 shells, $75.00. Wollensak 20-x drawtube spotscope, Mossberg stand, excellent, $23.00. Weaver 330-C, post, T mount, new, $30.00. TRADE ONLY—Savage M-20, .250-3000, last model, excellent, factory new 1938. Want only short action Sedgley or Mauser same condition. Ammunition if wanted. Eight boxes 410 gauge 3" shells, "skeet loads" for same 7½ shot. Sixty fresh Remington .257 Roberts loads for 87 grain 250's. SELL, TRADE—Mossberg model 542-M, .22 Mannlicher type carbine, excellent, month old, 100 ammunition, $15.00. H. & R. Target Model .22 Revolver, good to excellent, two holsters, belt, 100 ammunition. $10.00. Either or both above for good target scope. Enclose stamp, describe equipment, I have no junk and want none. Basil Tuller, Galeton, Pa. 6-43

SPRINGFIELD, NEW BARREL, SERVICE C stock, new nickel steel bolt, heat treated action reblued, like new, $65.00. Krag .30-40 carbine, sling, Rice peep, V.G. in, good plus out, $27.50. WANTED—Now or anytime, will pay cash or trade: K22; W52, Standard, Vaver sights preferred; Enfield issue; Ideal lubricator and sizer; Colt .38 super; .45 Automatic; .32 and .25 Automatic; High Standards, any model; Alaskan scope or equal on W70, Springfield or separate; W71 deluxe; Hornet ammunition; 97 Trap. Almon Williams, Berea, Ohio. 6-43

WINCHESTER M1911SL AUTOMATIC 12X26 perfect, $60.00. Stevens Double 12X30, excellent, $30.00. Remington M8 Automatic 35 Remington, good, $65.00. Winchester M86 33 W.C.F., good, $45.00. Luger DWM 30 caliber Official Holster, excellent, $50.00. Colt new service 45 Colt 7½ inch Barrel, excellent, $55.00. S. & W., M. & P., .38 Special Reblued, good, $45.00. Colt Officer's Model 38 Special Reblued, good, $45.00. S. & W. Tip Up 22 Short for collector's good, $8.50. Many Others. List, Stamp. Ed. Howe, Coopers Mills, Maine. 6-43

NEW WINCHESTER 52 SPORTER, FIRED 35 rounds, cost $108.80. Sell for $100.00. Bausch & Lomb 20 X 65 mm Spotting Scope with Freeland Stand, perfect, $85.00. TRADE—450 Factory Hornet Cartridges, 12 gauge shells and 1000 #6½ Primers, for what have you. Joseph G. Mundy, 432 Andrews Avenue, Glenolden, Pennsylvania. 6-43

FOR SALE OR TRADE: SECOND HAND shooting supplies, fair prices paid for shooting supplies, guns, barrel blanks, all kinds of gunsmithing. Ralph's Sport Shop, 407 Main St., Joplin, Mo. 6-43

GENUINE NAVAJO INDIAN DANCE RUG 5 X 7 ft., 16 Indian Dancers woven in. New. $50.00. Or TRADE—for excellent Targetspot or 1⅛ inches Fecker with mounts in 6, 8 or 10 power. John Grady, Williamstown, Massachusetts. 6-43

MAUSER M98 RIFLE, NICE ACTION, $15.00, Cash. Collectors Item, Howard Rifle, complete working order. TRADE—for Winchester SS Rifle, M70 or Scheutzen Action or ?. John Baker, 61 Bellevue, Willimantic, Connecticut. 6-43

HI-STANDARD MODEL E, EXCELLENT TO PERFECT, $60.00. TRADE—for King 4½ Woodsman, S. & W. 357 Magnum, Outdoorsman, Harpe 45 Automatic, must be excellent. Hill Pearce, Box 672 (Tower) Orlando, Florida. 6-43

SALE OR TRADE—SMITH-WESSON. 38, 5" BARrel, Safety hammerless, Improved barrel catch, 200 Kleanbore cartridges, $30.00. Smith-Wesson .32, 3½" barrel. 150 loads, $13.00. .32 Smith-Wesson. 3" barrel, Beautiful Curly Maple Stocks, 200 cartridges, $20.00. WANT—Colt S. A. or Bisley. C. C. Milliron, Hagerstown, Maryland. 6-43

FOR SALE: PARKER DHE 12 GAUGE, Skeet Single Trigger, solid rib, pistol grip, excellent in and out $187.50. Parker CHE 12 Gauge, Trap, double trigger, solid rib, straight grip, excellent in and out, $195.75. Parker SC 12 Gauge Trap, single barrel, ventilated rib, single trigger, straight grip, Morgen recoil pad, excellent in and out, $187.50. TRADE for Guns, Cameras, or Cartridges. Warshal's, First and Madison-BB, Seattle, Washington. 6-43

SELL OR TRADE: REGISTERED BEAGLES, 9 months $25.00 and $35.00. Rolleicord Camera, $100.00, what have you. Cecil R. Stockard, 5141 Riverview Rd., Dunwoody, Georgia. 6-43

SELL OR TRADE: ONE BOX 25 REMINGTON, $1.90; two boxes 32 Remington Automatic, $2.15 per box; one box 38-72, $2.25; one box 8mm, $2.25. WANTED—.22 Hornet Shells. Keith Lechelt, Kennewick, Washington. 6-43

XE GRADE FOX 12 X 30 F. & F. EXCELlent in, V.G. out, $125.00. 23-J Howard R. R. Watch 16 size, $50.00 Ladies Small Wrist Watch, 15-J, 18K gold, $22.50. Gillette Electric Razor, $12.50. Neidner-Springfield, .25 caliber barrel, $12.50. WANT—Hi-Standard, E. Andrew Spina, Towanda, Pennsylvania. 6-43

PARKER G.H.E. 12, 30", F. & M., SINGLE TRIGger, ventilated rib, Beavertail, straight grip, pad, perfect, cost, $226.00; $125.00; Winchester 12, 16, 28", full, Beavertail, pad, perfect, $50.00. WANT—Winchester 21, skeet, pistol grip, ventilated rib, 16 gauge, 26". Send description. Rolp O. Smith, Clay Center, Kansas. 6-43

SELL OR TRADE—IDEAL #3 TOOL COMPLETE with bullet sizing die and mould #358246 for 38 Special, 250 Remington #2½ primers, $18.50. WANT—Sisk 40, 50, 55 grain .224 bullets, small rifle primers. R. G. Adams, Red Oak, Iowa. 6-43

ACETYLENE WELDING OUTFIT, 25 LB. GENerator, Purox Torch, complete set tips, cutting attachment, 100 ft. good dual hose, adapter to make airplane torch, 2 tips, value $250. TRADE—for Ammunition, 22 Long Rifles, 300 Savage, Colt M. T., Target Rifles, what have you? Complete description if interested. Walter Hughes, Silver Springs, Fallbrook, California. 6-43

.32-20 SAVAGE, V. G., EXCELLENT BORE, cartridges, components, $35.00; .270, 7mm, 32 S. L., .38-55 Ammunition or TRADE—for large rifle primers, '06 Sporting Ammunition. See Wanted Ad, this issue. Dick Haskin, 1017 S. Sixth Ave., Arcadia, California. 6-43

FOR SALE OR TRADE—IDEAL LOADING Machine 12 gauge, good to poor; 500 Felt Wads, 1000 cardboard Wads, 600 primers, 2# powder, all $21.00; 22 L.R., $8.00 per 500; 45 Colt Automatic, no number but registered in Michigan, good, $32.00; Primers, 6½, 1½; Bullets 25 caliber, 5¢; .257 Ammunition, $3.00 per box; 1 set Pacific Dies, 2, new 257, $18.00. WANT—Alaskan Scope, Mount for W70, Walnut Hill, 2000 Gas checks 257, Winchester Magnum Pump, Winchester .38 Caliber Rifle, Remington .141, 32 Remington, 401 Rifle, Weaver 330. See other advertisement for other items. T. Gies, Hastings, Michigan. 6-43

SALE OR TRADE—25-20 STEVENS 44, TOOLS, Mold, Ammunition, $30.00, excellent. WANTED—2R Lovell, Hornet, 30-06; also Tools, Components for above, 30-30 Ammunition, 3 to 6X scope. Paul Dutter, 10446 Moorpark, North Hollywood, California. 6-43

BELGIUM BROWNING AUTOMATIC. 12 gauge, 28" full. Good plus, $52.50. S. & W., side ejector, 32 Long. 6", blue, round grips, V.G., box cartridges, $37.50. WANT—44 Short cartridges, Camera, guns, Binoculars, What? E. A. Bastel, Prairie du Chien, Wisconsin. 6-43

22-45 CONVERSION SERVICE UNIT, NEW, $75.00. TRADE—for new Ace, National Match or Shooting Master Magnum. Don Gowen, 322 Plant Avenue, Tampa, Florida. 6-43

FOR SALE OR TRADE: S. & W. 44 SPECIAL 6½" perfect factory condition $60.00. Six boxes factory ammunition, extra at list price with gun only. WANT—perfect S. & W. K-22 and ammunition. Frank Rosselot, Room 1910, 17 No. State St., Chicago, Illinois. 6-43

HAVE 32, 44, 44G-G, 45, 455 AMMUNITION; barrel for Ithaca 12 pump with combined Weaver and Poly; Aviator type Wrist Watch; 32 Hammerless; 44 S. & W.; 45 S. & W. "Multi" (see November 1938 Outdoor Life). WANT—"B" Hi-Standard; Colt 38 Super Automatic; Also Items my March ad. Ray Welker, 406 N. Harvey, Oak Park, Illinois. 6-43

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VERY GOOD SPRINGFIELD SPORTER, HIGH number, nickel steel bolt, very good condition, accurate, $80.00. Will trade for 4X Zeiss or Hensoldt. Mac Tabor, 600 S. Mentor, Pasadena, California. 6-43

SELL—.30-'06 CARTRIDGES, BOAT-TAIL BULLET, $6.00 hundred. WANTED—Service Ace, Hornet cases, small size primers, saddle makers stamps. Carl Lindahl, 180 North Wabash, Chicago, Illinois. 6-43

SELL OR TRADE—S. & W. .38-44 TARGET, 6½", nickel, good, 150 factory loads, $37.00. Sharps .56, Lawrence lock, fair, $15.00. Pond .32 R.F. poor, $5.00. WANT—Excellent Ladysmith; Stevens #570 scope; S. & W. Russian, ruined bore. Ray Smith, R1, Selinsgrove, Pa. 6-43

PERFECT, W70-220, ALASKAN, REDFIELD Junior Mounts, 300 each fired cases, primers, bullets, new Pacific tool, $190.00, .38 Special OMT HB 100 cartridges, $65.00. Colt .45 Automatic Commercial, engraved, 100 cartridges, $75.00. Excellent Colt .38 Special OMT, 6" standard barrel, 100 cartridges, $55.00. Ammunition: .32 Police Positive; .32 S. & W. Long; .45 Automatic Rim; .25, .30, .32 Remington; .300 Magnum; .22 Hornet; .38 Special. Will trade at prewar prices for .22 L.R.; .218, 219, .300 Savage; .35 Remington; and other calibers; .22, .25, .270, .30 caliber bullets; Any size NMNC primers; F.A. .30 and .45 caliber primers and ammunition; .45 Automatic Commercial cases fired once; Schmitt Model 12 or 24 tools, and extra dies complete, Pacific dies; self addressed stamped envelope please. Life member. Julius Nelson, Frost, Minnesota. 6-43

SAVAGE 420, O.U. 20 GAUGE, 28", M&F, ABOUT V.G., $38.50. L. C. Smith Ideal grade, 12 gauge, 30", M&F, ejectors, pad, ivories, about good out, better in, $57.50. Colt .45 Army Automatic, needs bluing, good in, $35.00. Colt P.P. .38-4, fair, $25.00. Stevens Double Hammerless, 12 gauge, 28", better than good, $27.50. Winchester 69, V.G., $14.00. WANT—Late Colt or Smith .22, .38. Winchester or Savage Hornet or Hi-Power. Winchester Pump 410 to 12 or automatic shotgun. Or what have you? Eldon Hildabrand, Russellville, Ky. 6-43

REMINGTON 37, NEW, UNFIRED, SLING TENsion equalizer, trigger shoe, perfect, $87.00. Colt .45, 1917, D.A., perfect in, excellent out, shot few times, holster and gun, $37.00. WILL TRADE FOR —Very good to excellent shot gun, pump with shells, or the following shells and cartridges: 12, 16, or 20 gauge; .22 short, long or long rifle. .38 special. C. W. Pettigrew, Route 2, Madison, Alabama. 6-43

WINCHESTER 94, .30-30, .32 SPECIAL, 92, 25-20, 38 Iver Johnson hammer, Scoremaster, 74L ammunition, components. ACCEPT—Trout, bass equipment. Woodsman, Police Positive Target, Olympic, 29S, 9-10 boots. Stamp reply. S. J. Walli, Lanse, Mich. 6-43

SHOT SHELLS #9-12, 16, 20'S SOME BUCK @ $2.00 box. Ideal Moulds 30812, 360363, 308291 @ $3.00 per. Winchester .30-30, .38-55 moulds @ $3.00 each. Ideal .38-40 or .38 S. & W. tool and mould @ $3.00. Ideal .30-40 D.A., $4.00, same .32 Special, $4.00. Sauer 12-28 M&F cost $385 V.G., Sell $100.00. Potter 44 Special dies $12.00. WANT Winchester 70, fast tool dies, .30 caliber bullets. F. Emerson, Auburn St., Auburn, Mass. 6-43

TRADE VERY GOOD MODEL 07 WINCHESTER .351 rifle and 100 cartridges for excellent 23D Hornet and ammunition or sell $40.00. Garland Winn, 1135 N. Rutherford, Macon, Missouri. 6-43

TRADE

TRADE—150 BOXES FRESH .22 LONG RIFLE Ammunition for B. & L. or Zeiss binoculars, 7 X 50 preferred. John Butwell, 4 Russell Street, Naugatuck, Connecticut. 6-43

TRADE—WOODSMAN 6½", GOOD IN, VERY good out, holster, two clips; for Colt Detective .38 Special, good or better. John Nunes, 2216 Lincoln Avenue, Alameda, California. 6-43

TRADE—IDEAL #3 TOOL .45-70, .45-90, EXcellent. WANTED—.30 caliber S.P. or H.P. bullets: 110, 150, 170 grain; 200, .30/06 Service Loads; few hundred Large Rifle Primers. Correspondence only. Will pay cash for any above components. Marion Lane, 743 G Street Springfield, Oregon. 6-43

TRADE—1300 #1½ PRIMERS. WANT—500 #111 Primers or #2½; 800, #8½ or #115, nonmercuric. Also .30-30 dies, perfect, for Ideal Tool. R. C. Lain, Port Jervis, New York. 6-43

TRADE—1000 .22 L. R. WESTERN FOR EQUAL number of large rifle primers. Frank S. Pickart, Lemmon, South Dakota. 6-43

TRADE—.38-55 HI-SIDE WINCHESTER, GOOD; Model 1894, Winchester .30-30, good, with 45 Cartridges for N.M.N.C. Primers and Jacketed Bullets for 30-40 Krag. William Marshall, Dundee, New York. 6-43

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WILL TRADE—WHAT DO YOU WANT? What have you? S. Doppelt, 363 Shepard Rd., Mansfield, Ohio. 6-43

TRADE—REMINGTON PUMP 12 GAUGE, Model 31, 28 modified plain barrel, perfect; For case & ½ (750) Remington, Peters, Winchester, or Western Shells 12 gauge 3¾ drams, 6 shot, must be fresh stock. Fred Wehman, 111 Meeting Street, Charleston, South Carolina. 6-43

TRADE—LARGE OR SMALL RIFLE PRIMERS for 48-50 gr. Lovell bullets. No primer sales. WANT—Fairbanks Scale; 38 bullet mold. A. E. Ellinger, Springwater, N. Y. 6-43

WILL TRADE—20 GAUGE MODEL 21 WINchester, single trigger, ejector, right modified left full, good condition, for same Standard Model 12 gauge, if have extra barrels will pay bonus. W. D. Hyatt, P. O. Box 221, Rangeley, Maine. 6-43

TRADE—4 BOXES FACTORY SWIFTS FOR 4 boxes factory Hornets. Chas. Morris, 2211 Virginia, Alton, Illinois. 6-43

TRADE—#1½, #120, #116 Primers; 170, 93 grain .30 Bullets; K-.22. WANT—Prismatic Spotting Scope, 180 grain .30 Bullets, Binoculars. Bill Stecker, Arcadia, Calif. 6-43

TRADE—MODEL 12 WINCHESTER AND 300 shells ,16 gauge, 28", full, excellent to perfect. WANT—Browning, Remington 12 gauge Automatic. Ted Werner, Nevada, Mo. 6-43

TRADE—.45 CALIBER AUTOMATIC SERVICE Model, 2 clips, holster and twenty cartridges, very good. WANT—3000 small pistol primers. J. F. Burns, 63 Fairmont Ave., Worcester, Mass. 6-43

TRADE—5,000 .22 LONG RIFLE KLEANbore Cartridges, value for value, for .22 Short's. Sportsmen's Headquarters Rifle Range, Palm Springs, California. 6-43

TRADE—NEW 70-250 BARREL AND STOCK. R2 sizing die for 24 Schmitt tool, Mossberg Spotting Scope and stand, Weaver IX shotgun scope, B mounts. Weaver Choke, 12 gauge, 4 tubes, Pacific scale, 50 grain Lovell bullets, 6½ primers. Prefer trading any of the above for or will buy for cash the following: .250-3000 cartridges or cases, 12 gauge shotgun shells, .22 rifle cartridges, Zeiss telescopes or binoculars, Kodak Bantam, high power rifles or shotguns, B. & L. Spotting Scope, 55 grain express bullets. Fairbanks scale. Stamps please. Dr. L. P. Bairo, 711 Prof. Bldg., Phoenix, Arizona. 6-43

TRADE—100, 40 GRAIN SISK SP .22 HORNET bullets for 200 N.C. small rifle primers. Have 200 to trade. J. P. Nugent, Hamilton Apts., #33, Muskegon, Michigan. 6-43

TRADE—300, .38 SPECIAL KLEANBORE AMmunition for 100. .250-3000. 100 grain preferable. Norman W. Nyhof, Cedar Grove, Wisconsin. 6-43

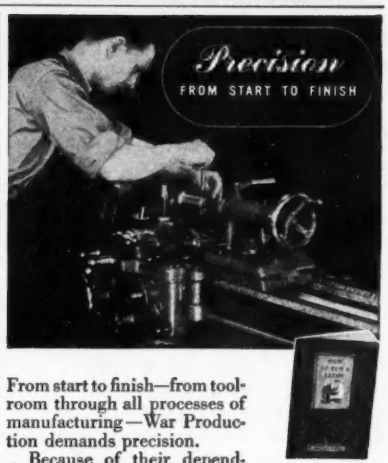
WILL TRADE—3000, #6½ PRIMERS; 3000, 45 grain, .22 copper jacket, soft point bullets. WANT—.220 Swift non-corrosive components and Jordan dies for same. Earl Harris, 635 West Judson, Youngstown, Ohio. 6-43

TRADE—500 OR 1000 REMINGTON .22 L. R. for large or small rifle primers. Arthur W. Hansen, 2715 Wood, Kansas City, Kansas. 6-43

900 REMINGTON 87 GRAIN, 100 WESTERN 86 grain, 250 Winchester 170 grain, 125 Peters, 225 grain bullets. Primers for all, Remington 37AR, perfect. WANT—Colt New Service, 38-40, Remington 25 caliber Model 14. W. Z. Bradley, Lititz, Pennsylvania. 6-43

TRADE—EXCELLENT REVERE M88, 8MM., 2.5 Wollensak lens plus cash for automatic or pump 16 or 20 gauge plus shells. E. G. Brust, 518 N. 11th Avenue, Melrose Park, Illinois. 6-43

.38 SUPER, GOOD, SEARS RANGER TARGET, heavy barrel, perfect. WANT—.45 Automatic, 20 gauge, double or pump for either. F. C. Smith, Warren, Arizona. 6-43



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TRADE—9MM LUGER 8", GOOD, 400 CARtridges. WANT—5 H. P. Evinrude or Johnson Outboard. WANT—348 Ammunition. TRADE—22 L. R. or Cash. Frank Huotte, 1848 Phillips Ave., Butte, Montana. 6-43

TRADE—.45 COLT AUTOMATIC, GOOD, FOR trap gun, 8mm Camera, Lathe, Varminter, or 16 gauge over and under shotgun. Ray L. Johnson, Almira, Washington. 6-43

UNFIRED EDDYSTONE 1917 ACTION, UNfired 1903 Springfield high number action. Eddystone Enfield, never fired, minor scratches outside, otherwise perfect 30-06, with bayonet and cartridges if desired. Government Model 1911 Colt .45 Automatic Pistol with Arched Housing, slight wear as to appearance, otherwise perfect, with cartridges and extra magazines if desired. Remington .41 Derringer, with fresh cartridges, perfect. High Standards, Model E and HE, 4½", with King Sights, perfect. Colt Ace, excellent, with 500 cartridges if desired. Colt Officer's Model .22 Revolvers, one excellent, one perfect. Smith & Wesson K22, excellent. New Winchester Model 70 in Hornet and .270 with cartridges. WANTED—.22 caliber Sisk or W. M. bullets, 50 and 55 grain, express preferred, others acceptable. .22 Bankers Special. Kit Gun. Service Ace or Conversion Unit. Stevens Offhand Pistol, 6", Browning Lightning or Trap Model, Overunder. Original Sharps-Borchardt, any caliber. Light or Medium weight Varminter on 70 action. Model 70 Rifle, caliber, condition, or stock immaterial, or 70 or 54 action only. State your proposition in first letter. I also have five cases (50,000) .22 Long Rifle cartridges (Winchester Leader, Peters Target, Remington Kleanbore) that I will trade for the items I want. Robert Haelig, Boundbrook, N. J. 6-43

Above: Connecticut Civilian Rifle Team, National Matches, Camp Perry, Ohio.

Right: National Guard Rifle Team representing Connecticut at Camp Perry.

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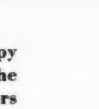

TRADE—270, .45 AUTOMATIC, RUSSIAN 256, 30 Newton, Shotgun Shells, other ammunition. WANT—Savage, Enfield, Mauser Actions, Hornet. Swift bullets. R. Beckman, Denton, Montana. 6-43

TRADE—B. & L. 65-MM SPOTTING SCOPE, perfect, with 13X, 20X and 27X eye pieces for Bausch & Lomb NRA Prismatic Scope and Colt Woodsman. Match Target, in perfect shape. J. J. Frank, 3975 Christopher, Detroit, Michigan. 6-43

TRADE—BROWNING O. & U., F. & M., 28" Rib, ST-AE, Pad, 7 pounds, perfect in, excellent out, fired 75 rounds, for very good Browning O. & U. Trap, 30" Ventilated Rib, F. & M., ST-AE, state Stock Dimensions. WANT—Few 3 inch 410 Shells, 6 or 7½. Member. Capt. Charles Stetson, Fitzsimons Hospital, Denver, Colorado. 6-43

WANTED

WANTED—2000 L. R. PRIMERS, 100 ROUNDS 256 Newton, Bullet Molds for 256 and 30-06, reloading tools for 30-06. FOR SALE—25 boxes, 10 rounds per box, Kynoch .333 Jefferies Assorted Points, approximately 10 years old, $2.00 box, Details stamp, please. Capt. E. R. Conover, A.S.C.O.D., Box 281, Patterson Field, Fairfield, Ohio. 6-43

WANTED—ANTIQUE FIREARMS: POWder flasks, gun books. Will buy entire collections, cash. James Serven, Box 1777, Santa Ana, Calif. tf

WANTED—FOR CASH 22/32 KIT GUN, EXCELlent, Flint Lock Pistol, shooting condition. Cecil R. Stockard, 5141 Riverview Road, Dunwoody, Georgia. 6-43

WANTED—REMINGTON .25 OR .32 PUMP ACtion Rifle, in good condition; also .38-56 Rifle. H. J. Richter, Amity, Oregon. 6-43

WANTED—FAIR PRICES PAID FOR TARget Pistols, Revolvers, Rifles and Antique Guns of all kinds. Ship for estimate. Public Sport Shops, Dept. R-61, 13 S. 16th St., Philadelphia, Pennsylvania. 6-43

WANTED—12 GAUGE SHOTGUN SHELLS, ANY quantity, state price and load first letter. Claude G. Crarup, Oxford, New Jersey. 6-43

SHARPS BUFFALO RIFLES WANTED FOR cash. Heavy barreled Models 16 lbs. or more and prefer scope mounted; also fine Sharps Creedmore Target Rifles; must be fine condition. M. C. Clark, 169 N. LaPeer Drive, Beverly Hills, California. 6-43

WANTED TO BUY FOR CASH: GUNS AND Ammunition. Alliance Gun Exchange, Alliance, Ohio. 7-43

WANTED—.22 BANKERS SPECIAL; PAY $35.00, perfect or near perfect. Pay $25.00 Colt .32 Automatic, same condition. TRADE—12 Gauge Hi-Velocity Shells, Hornets, Model D 4½" barrel for Hi-Standard, or cash, for new or perfect Model C Hi-Standard 6¾" barrel. Lt. (J. G.) Michael Buchman, U. S. Navy Dental Clinic, 205 Park Avenue, Brooklyn, New York. 6-43

WANTED—300 SAVAGE CALIBER CARtridges. Cash or trade for any other caliber ammunition. Klein's Sporting Goods, 503-E South Halsted, Chicago, Illinois 6-43

WANTED—PERFECT WINCHESTER MODEL 70, .30-'06, Lyman 48. High Grade Binoculars. S. Landry, 221-59th St., Niagara Falls, New York. 7-43

WANTED—COLT SUPER .38 AUTOMATIC, must be perfect. Will take extra clips, cartridges, etc. Write give price. C.O.D. examination required. Member N.R.A. Leonard Pritchett, Olive View, Sanatorium, San Fernando, California. 6-43

WANTED—AMMUNITION FOR MODEL '98 Mauser; also extractor and clip for Model '88 Haenel Mauser. Lt. V. B. Taylor, Headquarters Armored Force, Fort Knox, Kentucky. 6-43

WANTED—SMALL RADIOS, NEW OR used in working condition, cash or trade. S. Doppelt, 363 Shepard Rd., Mansfield, Ohio. 6-43

WANTED—STEVENS 620 OR 621, 20 GAUGE or 16 gauge, very good to excellent. Desire latest Model with stock fastened to receiver by inside draw bolt. Will pay reasonable cash price. Ray Maxwell, Vine Grove, Kentucky. 6-43

WANTED—.22 CALIBER SHORT OR LONG ammunition. Will pay $110.00 per case (10,000 shells). Distance no barrier, cash waiting. Peerless Vending Machine Co., Dept. AR, 220 West 42nd St., New York, New York. 6-43

WANTED—MAUSER PISTOLS CALIBER 9MM or 7.63. Also Styers, Savage and Ortgie in .32 or .380 calibers. All letters answered. Adolph Wm. Kosowski, 3405 Erin Ave., Cleveland, Ohio. 6-43

WANTED—100 to 5000 .22 SHORTS, LATE stock. Write price and quantity. FOR SALE—.22 BB caps and .22 CB caps. Write if interested. Frank Svec, 149 Oakdene Ave., Leonia, N. J. 6-43

WANTED—EMPTY CASES, .22's SHOT shells, 5¢ for .30-30 or .32 Special .30 caliber hunting bullets. F. Emerson, 157 Auburn St., Auburn, Mass. 6-43

WANTED—BROWNING OR REMINGTON OVER and Under Shotgun. Guy Willis, Lathrop, Missouri. 6-43

KRAG RIFLE OR CARBINE; CONDITION VERY good or better. Describe fully and price in letter. Homer Black, Box 751, Carlsbad, New Mexico. 6-43

WANTED—ANTIQUE ARMS, COLLECtions or single pieces purchased at fair prices. Give full description. Kimball Arms Co., Woburn, Mass. tf

WANTED—7.62 RUSSIAN AMMUNITION. ALSO want Krag Rifle or Carbine. State condition. All replies answered. Erl Svendsen, 1151 West Adams Street, Chicago, Ill. 6-43

AMMUNITION WANTED, SMALL OR large quantities: .30-30; .32 Special; 35 Remington; .30-06; 300; .22's. Send description and best cash price. The Jaymac Co., Jackson, Mich. tf

WANTED—FOR CASH: REMINGTON 12 O. & U. Model 32, 26 inch skeet boring, ventilated rib, single trigger, ejector, excellent to perfect condition only. A. W. Koehler, 3523 Albemarle St., Washington, D. C 6-43

WANTED—ONE MAUSER '98 CARBINE AS issued, must be very good or better, barrel immaterial. All letters answered. Hurley O. Saxon, Ship's Company, RM2C, U.S.N.T.S. (Radio), Madison, Wisconsin. 6-43

WANTED—.25-35, .30-30, .32 SPECIAL JACKeted bullets, primers, cases. James Havel, Thief River Falls, Minn. 8-43

WANTED—FINE FARQUHARSON ACTION OR Rifle. Also a perfect Colt Camp Perry with 6" barrel wanted. Jerry Glaser, 4587 West 220th St., Fairview Village, Ohio. 6-43

WANTED—STANDARD STOCK FOR WINchester Model 70, wood only, condition unimportant. Wm. Hammond, Richburg, New York. 6-43

WANTED—.22 SHORTS, LONGS OR LONG Rifle Cartridges, I pay 30¢ for Shorts; 40¢ for Longs, 50¢ for Long Rifles, send what you have express C.O.D. Percy Hoffman, 36 S. 4th Street, Harrisburg, Pennsylvania. 6-43

WANTED—COLT SINGLE ACTION ARMY REvolvers, perfect, 5½", calibers .45 Automatic and .22 Long Rifle. Irwin Kotek, 28 N. Hazel, Danville, Illinois. 6-43

WANTED FOR CASH—SHOTGUNS, Rifles, Pistols and Revolvers. Can use all makes and types. Describe guns fully in first letter, state price, all mail answered. Big Ben Mercantile and Loan Co., 179 Third Street, San Francisco, Calif. tf

WANTED—EXCELLENT CONDITION, .30 CALIber, Military Mauser Automatic Pistol, with 20 Shot Magazine; also New Service or 1917 Army Colt, any condition. Kenneth White, Vernonia, Oregon 6-43

WANTED—CLIP AND AMMUNITION FOR Colt .25 Automatic. Lt. A. W. Hjort, Stark General Hospital, Charleston, South Carolina. 6-43

WANTED—TO BUY 3 OR 4 BOXES OF .22 Hornet factory ammunition. Name your own price. L. T. Bergstrom, Watseka, Illinois. 6-43

WANTED—FRONT SIGHT INSERTS FROM Lyman #17-A and #77 front sights. Mail me the inserts you are not using. Will pay 10¢ each. W. P. Klapp, Paoli, Pennsylvania. 6-43

WANTED—WINCHESTER MODEL 12, 12 gauge Magnum, 32 inch ribbed barrel, chambered for 3 inch shell. Will pay from $50.00 to $75.00 depending on condition. Write before sending gun. Pius Mutter, Colfax, Washington. 6-43

WANTED—HIGH CASH PRICE PAID FOR FOLlowing in excellent to new condition: Colt Target Ace; Colt National Match; Model 75 Winchester Sporter; Lyman all weather Alaskan; 48 Grain .220 Swift ammunition; .22 caliber Long Rifle ammunition; latest Model 52 Sporter; 275 H. & H. on Magnum Mauser Action; similar 300 H. & H.; 2-R Lovell Repeating Rifle on D. S. T. Mauser or Model 70 action; Components for Lovell; Redfield sight number 100-M or 90-M. Don Hopkins, E. 831 Rockwood Blvd., Spokane, Washington. 6-43

WANTED — FOR CASH, AMMUNITION, any quantity, all calibres, Write. Public Sport Shops, Dept. R-61 13 S. 16th St., Philadelphia, Pennsylvania. 6-43

WANTED—NATIONAL MATCH SPRINGFIELD, excellent or better, above 1,275,757, Stock immaterial; Mauser 1898, good; .270 Winchester, excellent or better. Carl J. Weist, Route #2, Richmond, Indiana. 6-43

WANTED—BOLT ACTION .219 ZIPPER, EXCELlent or better. N. D. Starr, 6202 5th Avenue, Los Angeles, California. 6-43

WANTED—COLT AND S. & W. REVOLVers, Automatic Pistols, .30-06 Cartridges, .45-70 Cartridges, Springfield Rifles, Enfield Rifles, Krag Rifles, Cameras any make. Warshal's, First and Madison-BB, Seattle, Washington. 6-43

WANTED—.22, .38, AND .45 TARGET PISTOLS, automatics, and rifles; .22-.45 conversion units especially desired. Details first letter. Russell Smith, Police Range, Honolulu, Hawaii. 6-43

WANTED—TWO MODEL 70 TARGET GRADE .257 Roberts; also reloading tools, components and ammunition. Must be excellent to perfect. What have you? Cecil H. Kelley, Rockwood, Tennessee. 6-43

WANTED—CONTAX LENS, SONNAR 18 cm. f/2.8; also Sonnar 8.5 cm. f/2; also revolving finder. Will pay good price. M. A. Hogan, 201 S. Main St., Ann Arbor, Michigan. 6-43

WANTED—BROWNING O. & U. 12, GIVE PRICE and full description, shells: W54 Hornet. John Wilkins, 5025 Fifth St., N. W., Washington, D. C. 6-43

WANTED—WINCHESTER #70 TARGET GRADE, .300 Magnum, with medium heavy barrel. Must be perfect inside. Also .30 caliber jacketed bullets, 93 grain or heavier. W. A. Windas, Police Dept., Palos Verdes Estates, Calif. 6-43

WANTED—HI-STANDARD MODEL A., COLT .45 Automatic, Commercial. Officers' Model .22 and .38. Benjamin .177 Air Pistol, new model. Hodsock's Ballistic Tables. All must be excellent to perfect. All letters answered. Capt. H. M. Ogan, Jr., AAFBS, Midland, Texas. 6-43

WANTED—POLICE POSITIVE TARGET .22 OR K-22, and Stevens or Colts .22 Pistol. Pay cash, C. S. Spencer, Argillite, Kentucky. 6-43

WANTED—WINCHESTER 1892 MODEL LEVER Action Carbine .25-20, good or better condition. State price in first letter. All correspondence answered. Edward Marsh, 75 Queen St., Bristol, Connecticut. 6-43

AMMUNITION, ALL TYPES WANTED. State condition, age and caliber, High prices paid. Make offer. Stoeger Arms Corporation, 507 Fifth Avenue, New York, N. Y. tf

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WANTED — MANNLICHER - SCHOENAUER OR Mannlicher type Mauser, must be excellent. Give all details. Charles Spall, 4572 Bronx Blvd., Bronx, New York. 6-43

WANTED—CASH FOR CAMERAS, BINOCulars, Telescopes, Firearms. Good Guns wanted in trade. National Camera Exchange, 11 So. 5th St., Minneapolis, Minn. 7-43

WANTED—PACIFIC RELOADING TOOL AND bullet moulds for .38 Special, Especially Ideal Mould #360271-S. Powder measure, B. & M. or Ideal #5. Very good or better. Cash. I. L. Feld, Box 1424, University, Alabama. 6-43

WANTED—COLT .45 S. A. ARMY, 5½" OR 7½" barrel, "U. S." on frame, one-piece wood grip; good or about, describe fully, state price. L. E. Ruffle, 64-33 98th Street, Forest Hills, New York. 6-43

WANTED—A .30-30 LEVER ACTION RIFLE IN good condition; also #429421 Ideal Mould. J. A. Parker, Box 413, Melbourne, Florida. 6-43

WANTED—GOOD 40-65 SINGLE SHOT RIFLE, any make, Winchester preferred. Thomas Fisher, Montville, Connecticut. 6-43

WANTED—GOOD OR BETTER 30-06 RIFLE, prefer 70 Winchester, DCM Sporter, National Match or 30S Remington; also want Sharp's Handloading Guide, Naramore's Handloaders Manual. Lawrence Westhoff, Route #1, Box 2116, Bremerton, Washington. 6-43

WANTED—REMINGTON MODEL 30-S FACtory stock, good condition. Edward W. Gearhard, Life Member, Gooding, Idaho. 6-43

WANTED—GOOD TO PERFECT .30-06 RIFLE with good hunting scope. All letters answered. Cash paid. Ronald Innes, Savageton, Wyoming. 6-43

WANTED—.30 CALIBER LUGER CARTRIDGES. SELL—128 .30 caliber Mauser, $5.00. Joe Hunter, Winchester, Idaho. 6-43

WANTED—PORTABLE TYPEWRITER FOR cash or will trade. State price, or what you want in trade. S. Doppelt, 363 Shepard Road, Mansfield, Ohio. 6-43

WANTED—$85.00 FOR KILBOURN HORNET Scope, Tools, Ammunition 23-D preferred, excellent or better. T. E. Erwin, Box 411, Oroville, Washington. 6-43

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New Magazines for .32 H. & R. Automatic	2.50
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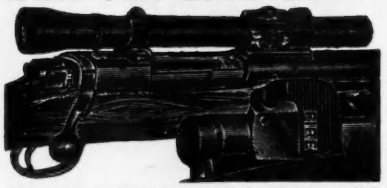

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WANTED—22-45 CONVERSION UNIT. Winchester 64 Deluxe 30-30 or 32 with ammunition. Winchester 52 Standard barrel. Almon Williams, Berea, Ohio. 6-43

WANTED—PAIR OF 7 X 50 BINOCULARS, Ziess or B. & L.; also Marlin 90, O. & U. shotgun any gauge. Mel Leitch, 130 Linden Avenue, Glen Ridge, New Jersey. 6-43

WANTED—SET OF WATCH REPAIR TOOLS and Watch Repair Parts. Si Sharp, Slatyfork, West Virginia. 6-43

WANTED—ANTIQUE FIREARMS, EDGED weapons, cartridges, gun books, powder flasks. Will buy entire collections, Cash. H. W. Cleveland, 1712 Ohio, Long Beach, California. 8-43

WANTED—.22, 4½ WOODSMAN AND .22 Single Shot Crosman Air Rifle. C. F. Inglee, Union Avenue, Amityville, New York. 6-43

WANTED—S. & W., 1917 .45 CALIBER, GOOD to perfect. WILL TRADE—.38 caliber Colt D. A. Army, poor finish, good action and pay difference, if any; WANT—also .30-06 Springfield, ammunition. Ed. T. Nance, Jr., 310 East Lane Street, Shelbyville, Tennessee. 6-43

WANTED—.270 BULLETS OR AMMUNITION, .257 and .224 bullets, rifle primers, .30 caliber 110 gr. bullets, trap loads. Will trade some .257 and .22 L. R. ammunition. William Bowman, 22 N. Hazel Street, Danville, Illinois. 6-43

WANTED—WARNER AND SWASEY SCOPE, Walther PP-PPK, Webley revolver, Remington Hepburn, Mauser Army rifles, 9mm., 12 ga., ammunition. Randall Goff, 35 Rumstick Road, Barrington, Rhode Island. 6-43

WANTED—.257 SPORTER, VERY GOOD OR better, with ammunition or components. TRADE—.32 P.P. 4" barrel, some blue worn otherwise very good, for .22 target handgun. SELL—Conn E flat silver & gold Commodore sax excellent $100.00. Maurice Newton, 703 Highland, Boise, Idaho. 6-43

WANTED—CARRIER AND PARTS REMington Model 10; receiver and other parts Winchester 97 and Model 12; Colt .45 automatic, any condition. SELL—Savage Model 19, V.G. $35.00; Marlin 97 rifle, .22 caliber, V.G. $22.50; Stevens 12 gauge repeater V.G. $30.00. H. Oelberg, Elkader, Iowa. 6-43

WANTED—7 X 35 BAUSCH & LOMB BINOCular, individual focusing, late model, excellent condition. Give price and serial number; also want B. & L. spotting scope. M. E. Hutton, Jr., 222 South Mariposa Ave., Los Angeles, California. 6-43

WANTED — GOOD CHAMBER FINISHING reamers .30-'06, .25 long rim fire. 1000 NM primers for F.A. .30-'06 cases, reasonable price. 12 gauge primed black powder shells, new and empty. Barrel and magazine assembly suitable for cutting to 20 or 22 inches, 12 ga. Winchester 12, or 16 ga. Browning Auto., distributor assembly for 1926 Harley-Davidson Twin, good, or consider selling fair machine with nearly new rubber. SELL—new 22 inch Krag barrel only $12.50 F.O.B. 10 ga. double percussion, Belgian, new but considerably shopworn, left barrel spiral grooved, bore needs some polishing before shooting, $15.00 F.O.B. Trades considered. Stamp please. Walter D. Pettis, U. S. Engineer Office, Greenville, Mississippi. 6-43

WANTED—IDEAL NO. 4 TOOL, OLD OR NEW Model, .38-40, .44-40 or .45 Colt caliber. Ideal No. 10 .250-3000 or similar caliber. Exchange M-1 cartridges for M-2. F. L. Ferguson, Roaring Springs, Texas. 6-43

WANTED—ITHACA "FEATHERLIGHT" 12-26" or 28". Benjamin .22 air pistol. Haenel No. 28. Win.-42-410. SELL—Browning and Remington automatics, 12-28", M. & F. respectively, ribbed. F. C. Culler, Alliance, Ohio. 6-43

WANTED—PRIMERS 9½, 8½, 120, 1½, FA70, Krag empties fired once, 220 grain MC bullets. Stevens Favorite .32 rimfire. W. S. Tanksley, Bristol, Virginia. 6-43

WANTED—IMPORTED TRAP BUTTPLATE. Must be new or excellent. Give description and size. A. H. Peterson, 103-28 Avenue, Spokane, Washington, 6-43

WANTED—.45 NATIONAL MATCH, COLT Shooting Master .38 or .357, Match Target Woodsman, Vaver sights 36 F.S., W52LT, 35 MIE, Ideal lubricator and sizer, Pacific tool and molds for .38 and .44 Special. Primers non-mercuric, all sizes, Merit Melting Pot. Please state condition and price. Lloyd Folsom, member, 116 Bartholomew Street, Peabody, Massachusetts. 6-43

WANTED—BROWNING 12 OVER UNDER, lightning model, single trigger, with rib, excellent to perfect. Harry C. Smith, 65 N. Charlotte St., Manheim, Pa. 6-43

WANTED—COLT AUTOMATIC PISTOLS, .25, .32, .38 or .45 caliber. Warshal's, First and Madison-BB, Seattle, Washington. 6-43

WANTED—CASH FOR YOUR FINE AND beautiful guns. Hershey's, Orrville, Ohio. 10-43

WANTED—JOHNSON OR BENDIX OUTBOARD Motors. State Model, Condition, and best price. Fred Wehman, 111 Meeting St., Charleston, S. C. 6-43

WANTED—A-1 RIFLE USING THE .303 BRITISH cartridge. Arnold Terhaar, 6425 Cross St., Jacksonville, Fla. 6-43

WANTED—G. & H. MOUNT FOR ALASKAN TO fit #70 Winchester, new or very slightly used. Keith D. Lott, 186 S. 3rd West, Lehi, Utah. 6-43

WANTED—NOT FOR RESALE, MAGNUM 10 gauge Ithaca; .22 Hornet and .22 Hornet cartridges; loaded shotgun shells 12, 16, 20, 410 and Magnum 10 gauge. Also loading tools, wads, brass shells, noncorrosive primers for all above sizes. Shot, all sizes. High quality air rifle pellets. Fred Holmes, Professional Bldg., Phoenix, Ariz. 6-43

WANTED—LYMAN, FECKER OR UNERTL rifle scope in 10, 12, 14 or 16 power. Will pay cash. TRADE—150 Winchester 218 Bee, 50, 25-20, empties, 1 lb. 2400 powder, 200 small primers for 150 factory loaded 218 Bee's. Kenneth Sutton, 112 East 41st St., Wilmington, Delaware. 6-43

WANTED—.32-20 REVOLVER, S.A. PREFERRED. Bolt action repeating .22 rifle. Portable typewriter. Paul Albrecht, Courtenay, North Dakota. 6-43

WANTED FOR CASH — PRISM BINOCulars, Field Glasses, Microscopes, Sextants, Surveyors and Builders Levels. Give description and price in first letter, all mail answered. Big Ben Mercantile & Loan Co., 179 Third Street, San Francisco, Calif. tf

WANTED—CASES AND JACKETED BULLETS .30-30, .300 Savage, .35 Remington Auto and .32 Winchester Special. Will pay 2 cents for fired cases, 5 cents for new cases, also 3 cents for Jacketed bullets for above calibers. John Skupny, 11405 Conant Avenue, Hamtramck, Michigan. 6-43

WANTED—12 GAUGE SHOTGUN SHELLS, NO. 4, 5 or 6 shot. State brand, shot size and price, also S. & W. Magnum, and Zeiss Binoculars. Victor E. Recane, 424 N. Lockwood Ave., Chicago, Illinois. 6-43

WANTED—FOR PERSONAL USE, REMINGTON or Western 8½ Primers; Winchester 115 and 116 primers; 3031 and 4320 powder; .22 caliber jacketed bullets. (Life Member.) Frank P. Glass, Sentinel-Star, Orlando, Florida. 6-43

WANTED AUTOMATIC PISTOLS, .22, .32, and .45 Caliber. Warshal's, First and Madison-BB, Seattle, Washington. 6-43

WANTED—COLT, ACE, PERFECT. WILL PAY cash. Write description, serial, price. Will consider late, Colt Match Target, perfect. Fred R. Pope, West Lebanon, New Hampshire. 6-43

WANTED—.357 MAGNUM S. & W., PERFECT. Also tools and components for .38 Special, .357 Magnum, .30-30 and .30-06. Must all be excellent to perfect. Maj. W. A. Stohl, Harlingen Army Gunnery School, Harlingen, Texas. 6-43

WANTED—REDFIELD JR. MOUNT FOR 330 Weaver, for N.R.A. Springfield Sporter. J. E. Stewart, 1224 So. Elm, Casper, Wyo. 6-43

WANTED—.38/32 2" S. & W., BLUE, ROUND butt, very good or better. State condition and price. H. A. Barrows, 509 E. Fourth, Santa Ana, California. 6-43

WANTED—.30-30 CASES. PAY PREMIUM, .30 caliber bullets. F. Emerson, Auburn Street, Auburn, Mass. 6-43

WANTED—COLTS .22 OFFICERS MODEL TARget 38 ounce or K-22 Masterpiece, perfect to excellent. Louis Knakal, Widen, West Virginia. 6-43

WANTED—12 GAUGE DOUBLE MAGNUM with 3" chambers 28-32" barrels, weight 8 to 8½ pounds, Parker, Greener or Winchester, must be excellent or better. Send full description. P. S. Briggs, Oleum, California. 6-43

WANTED—COLT'S FLAT TOP TARGET BISLEY; also want Colt's Percussion Revolvers, state caliber, condition and price. Allen Cox, 535 Magnolia, Inglewood, California. 6-43

WANTED—WINCHESTER 70 OR 54 HORNET, must be excelent to perfect inside, reasonable price. W. H. Janssen, Nokomis, Illinois. 6-43

WANTED—BAUSCH & LOMB OR ARGUS Spotting Scope; Lyman or Fecker Target Scope, any power. W. P. Klapp, Paoli, Pennsylvania. 7-43

WANTED—WINCHESTER 75-T; 61; AMMUNItion. Double Ejector, Shells; Camera, 620, 616; Agfa Clipper Special. Hi-Standard, excellent to perfect, describe fully. H. J. McKinnon, Clarinda, Iowa. 6-43

WANTED — MATCH TARGET WOODSMAN. State price and condition. W. J. Thomas, 912 Penn, Reading, Pa. 6-43

WANTED—EVINRUDE 3.3 H.P. SPORTWIN Outboard Motor, Johnson 5 H.P. or other sizes up to 16 H.P. Pay fair price for excellent motors. J. L. Fricks, Albertville, Ala. 6-43

WANTED—FOR CASH: .351 AUTOLOADING Winchester, Farquharson action, Hornet ammunition, .22 Rim Fire Ammunition for pre-induction training. B. P. Lyon, P. O. Box 2180, Houston, Texas. 6-43

WANTED—BALLARD, WINCHESTER, STEVENS and other Schuetzen rifles with original factory left-handed stocks or stocks only; also desire Pope palm rests and other Schuetzen equipment. Chester Nikodym, 1326 West 103rd St., Cleveland, Ohio 6-43

I WOULD LIKE TO BUY AN H. & R. U.S.R.A. pistol with 10" barrel, excellent, late model. Emmert Studebaker, Tipp City, Ohio. 6-43

WANTED—EXCELLENT OR BETTER COLT Ace, pay premium, describe fully. Ralph Dittmann, 427 W. Bender Road, Milwaukee, Wisconsin. 6-43

WANTED—WINCHESTER MODEL 37 OR ANY moderate priced 28 gauge shotgun; also shells. Thomas Wildman, Mitchellville, Iowa. 6-43

WANTED—MODEL 8 REMINGTON AUTOMATIC or 14 Slide action; poor or fair condition, any caliber. Warren Dassy, Gladwin, Michigan. 6-43

MODEL 12 WINCHESTER TRAP GRADE, 12 Gauge, Ventilated Rib, prefer pistol grip; Alaskan Scope; Pressure Cooker. Condition excellent or better. Walter Gaw, 1004 Irwin St., Aliquippa, Pennsylvania. 6-43

WANTED—FOR CASH—USED GUNS. CASH for your idle shotguns, rifles, pistols and ammunition. Ship or write for estimate. We buy, sell and trade. Midwest Arms Exchange, 28 N. Hazel St., Danville, Illinois. 6-43

WANTED—30-06 NATIONAL MATCH OR TARget Winchester, with or without telescope sight, and ammunition. Dick Haskin, 1017 S. Sixth, Arcadia, California. 6-43

WANTED—STANDARD WINCHESTER MODEL 12, 16 gauge, solid Rib, good to perfect; new barrel for Hi-Standard Model C. Claude Shuff, 620 Franklin St., Johnstown, Pennsylvania. 6-43

WANTED—FRONTIER REVOLVER AND PARTS, cylinder, barrel, etc. Remington cap and ball and bullet mould. State condition. Life Member. William Bachrach, 6812 Harper Ave., Chicago, Illinois. 6-43

WANTED—RIFLES, ACTIONS, HI-SIDE SETtriggered Winchester S. S., engraved Ballards, Farquarsons, S. & W. K-38 Special, heavy .22 barrel blanks 14" twist, Pacific dies for 30-06, 44-40; Have .38 Colt's Bisley 7½", good $45.00, Remington .41 Derringer, engraved, chromed, perfect, fair in, $20.00, Fancy Deluxe carved percussion rifle, good, $50.00. E. Lind, 356 Page Blvd., Springfield, Massachusetts. 6-43

WANTED—NOSKE "A" OR ALASKAN WITH side mounts for M/70 must be good or better. J. W. Webb, 3600 20th St., San Francisco, California. 6-43

WANTED—BELDING AND MULL, #26 BULLET Seaters, 38 Special, 30-06, 30-40, give condition and price. J. Fry Withers, 1608 Chapman Avenue, S. W., Roanoke, Virginia. 6-43

WANTED—GOOD SPOTTING SCOPE; ALSO KIT 38 Pistol Case, state condition and price, spot cash. Harold Burnham, 110 N. Olive, West Palm Beach, Florida. 6-43

WANTED—12 GAUGE, CYLINDER-BORE AUTOmatic and Winchester '01, 12 gauge, Lever shotgun. FOR SALE: 3, .32 O. M., H. B. all King extras, cost approximately $73.00 each. Colt-King National Match. .38 O. M., L. B. $40.00. J. E. Mann, Jr., 2117 8th St., Lubbock, Texas. 6-43

WANTED—70 WINCHESTER, .250-3000, 24" barrel; Stith or Redfield Jr. mount-Weaver to 70 Winchester; B. & M. Visible Powder Measure; Fairbanks #3054 scale; B. & M. #28 or Pacific reloading tool; Ideal full-length sizing die; large NMNC primers; 87 grain jacketed bullets; everything for .250-3000. Excellent or perfect, reasonably priced, stamped envelope, please. Member. Edward Dudis, 732 Gondert Avenue, Dayton, Ohio. 6-43

WANTED—12 GAUGE AMMUNITION IN 4 TO 6 shot, .22 L. or L.R. ammunition, any amount, write stating quantity and price. TRADE—16 gauge ammunition for L. or L. Rifles. 22 rounds Western 9mm Luger for same amount 12 gauge, 175 rounds 22 automatic Winchester 1903, @ 2¢ each. Arthur Arnett, Route #2, Albion, Michigan. 6-43

WANTED—SISK OR W. M. LOVELL OR Express Bullets, 40 to 55 grains; Super Target-spot, 20X preferred, 10, 12, or 15 acceptable. Will pay your price or if my money is no good will trade bullets of almost any other caliber, or will trade any other items listed in this issue. Robert Haelig, Boundbrook, N. J. 6-43

WANTED—WILL PAY $12.50 PER 1,000 AND Express for .22 Short's or Long's. $16.00 for Long Rifles, any quantity. Sportsmen's Headquarters Rifle Range, Palm Springs, California. 6-43

WANTED—5 GOOD 45 AUTOMATIC PISTOLS; also Percussion Revolvers, in any condition. Cpl. Arthur Dickey, Bat. C, 546 C.A. Bn., Camp Haan, California. 6-43

WANTED—TWO WINCHESTER MODEL 94s. Caliber, Condition immaterial. Ed Howe, Coopers Mills, Maine. 6-43

WANTED—COLT WOODSMAN, COLT 45 AUTOmatic. Give price and condition of each. Flt. Off. Arthur F. Moss, 9th Troop Carrier Sqdn., Fort Benning, Ga. 6-43

WANTED—WINCHESTER 52 SPORTER IN NEW condition, with type "B" or Redfield Junior mounts. Phil Fine, Hotel Stafford, Baltimore, Maryland 6-43

WANTED—IN PERFECT, NEW OR EXCELLENT condition .22 Kit gun, 410 shotgun shells, 2½ or 3", also 20 gauge automatic or double barrel and shells, also high power rifle either bolt, lever, pump or auto rifle if you have cartridges, also want .22 automatic if cartridges can be furnished for same. Want Colt Woodsman or .22 S. & W. target revolver in new or excellent condition. C. O. Howard, Waxhaw, North Carolina. 7-43

WANTED—S. & W. .357 MAGNUM 4 OR 6 INCH barrel, must be factory new, never used, will pay premium price. Benj. Koodlach, 2344 Longwood Ave., Los Angeles, California. 6-43

WANTED—EXCELLENT DOUBLE BARREL OR Model 12, 12 gauge skeet or trap gun with ventilated rib and pistol grip. N. Glossbrenner, 801 S. 4th St., Yakima, Wash. 6-43

WANTED—20 AND .410 GAUGE SHELLS. GIVE length, load, age price and manufacture. T. G. Parker, Pikeville, Ky. 6-43

WANTED—S. & W. REVOLVERS AT FAIR prices. Inside very good or better. Especially want .38-44 H.D., .38 Military and Police 2" round butt and 6" target, 44 Special, triple-lock 6½" target. Also 1½" Fecker target scope. Bruce M. Burchard, 280 Coventry Road, Berkeley, Calif. 6-43

WANTED—.38 SPECIAL S.A.A. .32 AUTO CARtridges. A. D. Harris, Clarksville, Md. 6-43

WANTED—ENFIELD OR SPRINGFIELD ISSUE. Good condition. For civilian defense. Otto Keiter, Lowe Bldg., Dayton, Ohio. 6-43

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WANTED—FOR EXPERIMENTATION AND testing, large rifle N.M.N.C. primers. Charles Russell, 4301 West 210th St., Rocky River, Ohio. 6-43

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WANTED—WINCHESTER MODEL 12 HEAVY duck gun, excellent or better. Excellent Winchester Model 70, 30-06 with Lyman 48. D. C. Hickey, Jr., Ft. Spring, West Virginia. 6-43

WANTED—WINCHESTER MODEL 70, CALIber 270, or 257. Give description. R. I. McMains, Kirby, Wyoming. 6-43

WANTED—EXCELLENT OR BETTER, WINchester 70, 30-06, 24 barrel, describe fully. Roy Schulpius, 750 W. Bender Road, Milwaukee, Wisconsin. 6-43

WANTED—MODEL 70 OR SHORT MAUSER 250-3000, Barrel condition immaterial. Ammunition and components for 8mm, 22 Hornet and Lovell. Joe Scott Kirton, Orlando, Florida. 6-43

WANTED—HEAVY BARREL 52, IRON SIGHTS, very good to excellent. Describe gun and sights in first letter, also price. All correspondence answered. M. E. Camerson, 267 E. Arenas Road, Palmsprings, California. 6-43

WANTED—MODEL 70 WINCHESTER .250-3000 or .257 in Standard Target or National Match Grade. Will pay $25.00 for 2000 large rifle primers. Wayne Couch, Owensville, Ind. 6-43

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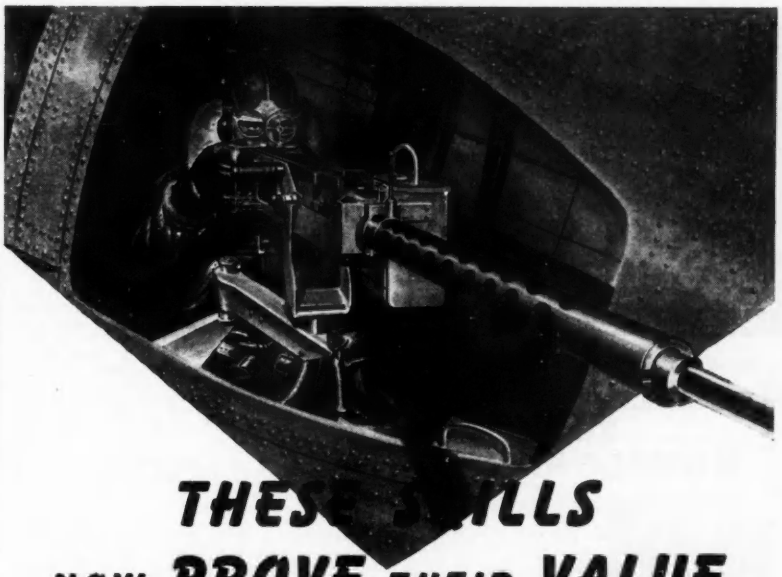

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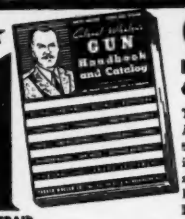

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BINOCULARS CLEANED AND REPAIRED. Established 1925. Alignment corrected to 1/1000 radian on our special collimator. Mail your glass for estimate. Mirakel Optical Co., Mount Vernon, N. Y. 11-43

TARGET TELESCOPE SIGHT, VERY good, 1¾ inch objective sixteen power, $85.00. Money refunded within ten days if not entirely satisfactory. A. Hubalek, 1167 Myrtle Ave., Brooklyn, N. Y. 6-43

SEND FOR FREE BARGAIN LIST OF Prism Binoculars, all guaranteed. H. Stern, Inc., 872 Sixth Ave., New York. tf

WEAVER SCOPES, IMMEDIATE DELIVery, 330 with Tackhole Dot, T mounts, $34.90; 440, $40.20; 29S, $21.10. B Mounts, $4.60 additional. T. K. Lee, Birmingham, Alabama. 11-43

UNERTL-BI-MAG. 2X FOR PRECISION work of any kind, $6.75, postpaid, folder free. Flaig's Hunters Lodge, Millvale, Pennsylvania. 6-43

ANTIQUES & CURIOS

INDIAN RELICS, CONFEDERATE BILLS, coins, minerals, gems, fossils, crystals. Illustrated catalog, 5¢. 100 ancient arrowheads $3.00. H. Daniel, Hot Springs, Ark. tf

ALASKA NOVELTIES, SOUVENIRS, USEful gifts! Walrus tooth key chains, 55¢. Map of Alaska, 25¢. Sheet twenty Alaska poster stamps, 15¢. Baggage stickers, 5¢. Decorated embossed envelopes with photo-stamp, 5¢. Alaska Mosquito trout fly, 30¢. Books, stationery, post cards, etc. Illustrated folder free. Alaska Specialties Company. Box AR-1921, Ketchikan, Alaska. tf

LARGE STOCK OF AMERICAN AND European Antique Arms. Send 10¢ coin for latest 9th edition catalog, featuring the important Dr. Buck collection. Antique arms wanted. We buy single pieces or whole collections. Fair prices paid. Kimball Arms Co., Woburn, Mass. tf

PRE-HISTORIC STONE TOMAHAWK, 75¢. 100 good pre-historic Arrowheads, $3.00. 10 tiny perfect bird arrows, $1.00. Spearhead, 25¢. List free. Caddo Trading Post, Glenwood, Arkansas. tf

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100 GOOD ARROWHEADS, $3.00. 20 classified minerals, 50¢. 5 perfect Birdpoints, 25¢. Glass, Miniatures, Catalog, 5¢. June's Antiques, Northbranch, Kansas. 6-43

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MISCELLANEOUS

MARLIN 12 GAUGE PUMP GUN BARREL 30", full choke, with shell tube and fore-end, fine condition, $15.00. Remington Model 11, 12 Gauge, 30" barrel for auto loading shot gun, blueing worn, some pits, $5.00. 2 Remington Model 10, 12 Gauge, Repeating Shot Gun Barrels, with holders, riot length, modified and cylinder bore, excellent condition, $10.00 each. Winchester Model 97, shell tube and fore-end, 12 Gauge, excellent condition, $7.50. Decoys, special sale, Mallard drakes and hens, $1.29 postpaid. .30 caliber 1 piece brass cleaning rods, $1.25 each. Iron Dumb Bells from 2 to 25 lbs., 25¢ per lb., shipped express charges collect. Public Sport Shops, Dept. R-61, 13 S. 16th St., Philadelphia, Penna. 6-43

SUPERWAX PRESERVES, WATERPROOF Canvas, leather. Prevents rust, 1¼ lbs., $1.00. Superwax, Box 1492-V, Milwaukee, Wisconsin. 6-43

50,000 PERCUSSION REVOLVER CAPS, #11, $2.50 per 1000. Public Sport Shops, R-61, 13 S. 16th St., Philadelphia, Penna. 6-43

SHOT GUN COVERS, ALL LENGTHS, $1.00. Household Thermometers, new 75¢ value, brand new, 25¢. Physicians' Thermometers, Pocket Style, with case, brand new, 3 for $1.00. Gun Oil, 1-oz. bottles, 15¢ each, $1.50 per dozen. Public Sport Shops, Dept. R-61, 13 S. 16th St., Philadelphia, Penna. 6-43

SALE OF SURPLUS GOVERNMENT Goods. Whelan Oiled Rifle Slings, 1", brand new, $1.50. Whelan Rifle Sling Straps, 1¼", brand new, $1.65; Swivels, 75¢ per pair. Springfield Sight Gauges, $1.00. .30-06 Empty Brass Cases, 75¢ per hundred. Empty Cases .38 Special Cases for small primer, shot once, 75¢ per 100. Brass Clips for .30-06 Cartridges, $2.00 per hundred. Canvas Canteen Covers, fine condition, 25¢. U. S. Army Military Haversacks, fine condition, 60¢. U. S. Army Web Shell Belts, 4" wide, with metal holders, 75¢. Public Sport Shops, Dept. R-61, 13 S. 16th St., Philadelphia, Penna. 6-43

PATENTS

PATENTS—LOW COST, EASY TERMS. Book and information free. Highest references. L. F. Randolph, Dept. 370, 416 5th St., Washington, D. C. tf

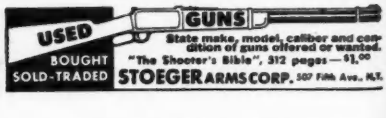
RECEIVED TOO LATE TO CLASSIFY

52 SPEEDLOCK, JOHNSON EXTRA HEAVY barrel, fancy stock, 1,700 cartridges; 52 Speedlock, Winchester heavy stainless barrel, extras including 1,700 cartridges; 52 heavy barrel Stevens 44½ DST Scheutzen, extras including 1,700 cartridges; 256 Newton Mauser, 60 loads, quantity components, Pacific dies, double mold, extras; $100.00 each. Beautiful Luna Lovell R2, $75.00. Accurate Remington Hepburn Lovell, 98 loads, dies, components, $60.00. Send for list, description of more rifles, handguns, scopes, sights, reloading equipment, scales, coat, glove, spotter, stand, targets, etc. Have powder, primers, bullet metal, cartridges, etc., for persons buying my guns. No dealer. Must sell out, moving into trailer. WANT—fine 35 mm camera. T. B. Sherzer, 17 East Florida, Evansville, Indiana. 6-43

WANTED—BEST HANDGUN, $22.50, SPRINGfield $30.00, Antique Pistol. 65 Bee. Felix Phillips, 1508 Clover, Amarillo, Texas. 6-43

TARGETSPOT JR. 10X AS NEW, LATEST, carrying case, $60.00. Ernest Fumasoli, 5937 Magnolia, Chicago, Illinois. 6-43

SAVAGE 23-C, BEAD FRONT, LYMAN 42 REAR, blocks, swivels, very good, with 300, .32-20 high velocity hollow points and Winchester A-5 Scope, plain mounts, very good, $55.00. Remington 29, 12-30, full, stock butchered to 13¼" pull, otherwise good, $30.00. John England, 115 Clifford, Muscatine, Iowa. 6-43



DUPONT NOS. 4198, 4227, 4320, 4350, 3031 and 4064, Hivel No. 2, 2400, Lightning, $1.60 lb. Sharpshooter, $1.75 lb. No. 4759, No. 6, Bullseye and Unique, $1.00 per 8-ozs. Send federal explosives license with order. Send empty 1-lb. powder cans for Hercules powders. Have 300 Western Super-X .300 Magnum 220 grain Silvertip cartridges at $13.00 per 100. 440 Remington .32 Remington Automatic 170 grain SP Core-Lokt cartridges, $7.50 per 100. Winchester Model 63 Automatic, 20", perfect in, very good out, with Weaver old Model 330 in "V" mount, $45.00 with 500 Long Rifles. No list. Stamp appreciated. Leslie Lindahl, Central City, Nebraska. 6-43

LATE 52 H. B., REDFIELD FRONT, M.G. REAR, sling and scope blocks, fired very little, excellent to perfect, $87.50. Standard barrel 52, 17A front, M.G. rear, sling, blocks, aluminum grip cap, detachable walnut cheek rest, very good, $55.00. 1000 L.R. with each gun, $10.00. .45 Colt Automatic, just blued, brand new barrel. 154 cartridges, very good, $50.00. 70. .25-35 Kleanbores, $7.00. .30-'06 cartridges, 4½¢. 9 lb., .35 caliber M. L. rifle, mould, powder, caps fair, $17.50. WANT—Excellent R-2, powder measure, .22 and .30 bullets, primers, Stith Weaver Mount for 99 Savage, what have you? Stamp please. F. H. Longfellow, Marietta, Ohio. 6-43

OLD GUNS WANTED. PAY UP TO $100.00 FOR those marked Patent Arms Mfg. Co. Also want old Colts and many others and carved powder horns. Write. George McQueen, 5111 Grant Street, Omaha, Nebraska. 7-43

WANTED—LATEST M52 H.B.; 2¼ X 3¼ ENlarger; Woodsman. SELL—10 quart National Pressure Cooker, practically new, $20.00. A. D. Sanial, La Crosse, Wisconsin. 6-43

FOR SALE OR TRADE—LUGER 7.65, SQUEEZER grips, 4½" barrel, very good, $40.00. .351 Model 1907, good inside, finish worn, $35.00. WANT—.30-'06 ammunition, Enfield barrel, Redfield rear sight to fit remodeled Enfield. Raymond Geiser, Gladstone, N. Dak. 6-43

S. & W. .38, 2½", NICKEL, V.G., $30.00. SAVage 23-D Hornet, excellent in, V.G. out, 29-S, T-1 mounts, 6X Litschert, V.G., 50 Remington, 45 grain factory, 100 Sisk 40 grain. $65.00. Spanish .32 good, box shells, $15.50. TRADE—.30-'06 M-2 for .22 L.R. WANT—S.A.A., 5½". .45 Automatic. Wesley Bates, Route #2, Columbia, S. C. 6-43

PERFECT HIGH STANDARD "B 4½" MARbles gold front, 150 rounds, $47.50. .38 Colt, 6", white bead front, Murad pointer grips, excellent plus, 50 rounds, $44.00. .38 S.W.M.P., .45 Colt automatic, holster. Each perfect in and out. Franzite grips, 100 rounds, $55.00. J. L. Shull, Tyler, Texas. 6-43

WANT MUZZLE LOADERS, COLLECTION pieces, automatics, fancy guns, Winchester 63, Free pistol. Latest Marlin carbine, .30-30, figured stock, 9 boxes latest ammunition, $105.00. Late model Reising pistol, very good, extra magazine, original box, $75.00 or target job. Rare Ladysmith, $35.00. Percussion Scheutzen, probably by Dan Lefevre, $50.00. Rogers & Spencer, very good, $25.00. Marlin .38-55, smokeless steel, octagon barrel, perfect in; loading tools, 5 boxes ammunition, primers, jacketed bullets, cases, $50.00. Miller Bedford, New London, Ohio. 6-43

TRADE—OK 4 MEAD KI YAK AND ELTO PAL, good, for Winchester Model 70, .257 preferred. J. R. Thompson, Burt, Iowa. 6-43

WANTED—.22 HORNET BULLETS, ANY MAKE, will pay $1.75 per hundred; .22 caliber gas checks $4.00 per thousand; also .30 caliber commercial bullets, $3.50 per hundred. One Target Type Scope, Lyman, Fecker or Unertl. All letters answered. John E. Felker, 245 E. Garrison St., Bethlehem, Pennsylvania. 6-43

TRADE—S. & W. .357 MAGNUM, 6" BARrel, excellent. WANT—Winchester 70 or Springfield 30-06, with Alaskan or equal, or Scope alone. Almon Williams, Berea, Ohio. 6-43

MODEL 1920 SAVAGE 250-3000, EXCELLENT inside, very good out. 330-S Weaver in special Redfield Mount, like new. 75 loads. $100.00. G. F. Thomas, 18 Devon, Glendale, Missouri. 6-43

TRADE—ARGUS 55MM SCOPE, NEW. WANT—B. & L. or Zeiss binocular, preferably 7 X 35. Stanley Wentling, Palymra, Pennsylvania. 6-43

SELL—KRAG 22-4000 VARMINT WINCHESTER H. S. Single Shot, heavy Sukalle barrel. Accurate, supply powder, 63 grain bullets, primers. 438 scope rib mount, cherry stock, cheek piece, loading tools, excellent. Express C.O.D. inspection. $80.00. H. R. Lathrope, Wisconsin Rapids, Wisconsin. 6-43

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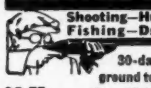
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REMINGTON 241 SPEEDMASTER AUTOMATIC Rifle, .22 shorts, excellent; with ammunition, $40.00. WANT—.32RF Pistol. A. T. Mickle, R-4, Madison, Wisconsin. 6-43

WANTED—VERY GOOD OR BETTER MODEL 81 Three Hundred Remington Automatic Rifle with ammunition. One hundred Kleanbore 45 grain Hornets. Elwyn H. Bruns, 1700 Paru Street, Alameda, California. 6-43

S. & W., M. & P., 38 SPECIAL 6", EXCELlent, $48.00; Colts 38 Super Automatic, perfect, $65.00; Colts .45 Automatic, very good, $48.00; Colts 1917, 45, very good, $42.00; Remington 30S, 257, Redfield Jr. 330 Weaver, excellent, $110.00; Luger 30, pistol, magazine missing, fair, $26.00; Colts slide action express rifle, 40-60, fair, $22.00; Colts slide action rifle, 44-40, fair, $22.00. WANT—Winchester Model 12 Heavy Duck gun, cash or trade. Ray Nelson, Roy, Utah. 6-43

NEW 20 GAUGE REMINGTON SPORTSMAN 28 inch modified, shells, $60.00. Like new, 12 gauge Winchester Automatic, 28 inch Mod., shells, $60.00. Very good S. & W., M. & P. 38 Special, shells, $30.00. WANT—Winchester, Remington, 257-06-300. B. R. Kinter, Bluefield, West Virginia. 6-43

WANTED—SPRINGFIELD NATIONAL MATCH Sporter, perfect to excellent, scope or good sights. Ned F. Smith, P.O., Box 2803, Honolulu, T. H. 6-43

S. & W. .38 SPECIAL 5" (HOLSTER), EXcellent, $50.00. Colt Automatic .380 (250 shells), excellent, New, $45.00. Colt Automatic .32 (50 shells), excellent, $38.00. Merwin & Hulbert (38 short), blue, collectors item, excellent working condition, looks like new, $35.00, with 300 shells. H. & R. 38 short nickel, good condition, $10.00. Parker double 30" (12 gauge), excellent, slight mar finish of stock, with $35.00 cowhide case, complete, $80.00, worth $115.00. Ranger, 12 gauge 30", excellent, double, $30.00. Money orders only. A. Elmgren, R. 1, Box 272, Palatine, Illinois. 6-43

SPRINGFIELD SPORTER, FANCY STOCK, 48, ramp, excellent, $95.00. Mauser Sporter 8mm, 102M, Ramp, 40 Cartridges, excellent, $65.00. Remington .22 short Automatic Model 24, V.G. out, excellent in, $28.00. Winchester 65-218 Bee, new, $56.85, excellent De Luxe, $70.00. 3 Springfield 06 issue, good, $45.00, Very good, $50.00, excellent, $55.00. 16 gauge French muzzle loader, lightweight, fancy, good, $15.00. Haenel .177 air pistol V.G., $12.50. Ortgies .32 Automatic, holster, good, $18.50. Colts O. P. 5 inch, 32/20, Stag grips, excellent, $55.00. Colts Shooting Master, 6½" .357 caliber, 200 rounds, perfect, $90.00. Colts Police Positive 5", .38 Special, excellent, $50.00. Colts .32 Automatic, blued, excellent, $30.00. British Bull Dog, .32 S. & W., good, $8.50. 235 rounds 9mm Mauser, $28.00. WANT—B. & M. powder measure, Remington #57 Shotgun primers, large & small rifle primers, used shotguns & rifles, .22 caliber jacketed bullets, #1 Animal traps, Rifle scopes. Any quantities. Description and prices first letter. Herman Treptow, 209-11 South Main St., Milltown, N. J. 6-43

WANTED—M70-06, STANDARD GRADE, STANDard sights or scope. Give full particulars. Claude G. Kaelin, Buhl, Idaho. 6-43

CHANGED MIND. WILL SELL SAVAGE M-20, .250-3000 listed elsewhere. Lyman receiver sight, sling, $60.00. 60 rounds ammunition, $6.00, with gun only. Or trade for Fecker, Unertl target scope. Another 330-S, T mount, Xhair, new, $30.00. Basil Tuller, Galeton, Pennsylvania. 6-43

FOR SALE ONLY—ENGRAVED THREE BARrel, 25 inch barrels, 7¾ pounds, 16x16x8.57 mm., very good with cartridges and components. Have used this gun extensively in Latin America and found it very satisfactory. $125.00. 12 gauge, double hammerless Cogswell and Harrison, 30" steel barrels, very good inside, 6¾ pounds, automatic ejectors, requires refinishing outside and adjustment, $75.00. John Pickering, St. Clairsville, Ohio. 6-43

TRADE—OUTBOARD MOTOR, WATERWITCH 517.33, excellent. WANT: K22, Winchester 63, percussion revolvers, early Derringers. John E. Kell, Box 1261, Santa Fe, New Mexico. 6-43

LITSCHERT 20X SCOPE PERFECT, $70.00, Eastmans Brownie Jr. Camera, $2.00, Excellent. Sterling Electric Razor, new $5.00, Savage 23D Hornet, fair, $20.00. WANT—Swift, Varminter, Lovells, with components, Mossberg, Spotshot or ?. Neil Dewey, 4 Second Ave., Union City, Pennsylvania. 6-43

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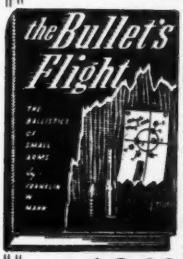

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WINCHESTER 52 STANDARD, 48J AND 17A, Mossberg scope with 10X Litschert attachment and accessories, wooden rifle case, M.O. $70.00. Lear H. Rice, Cape Vincent, New York. 6-43

COMPLETE .45 AUTOMATIC OUTFIT INCLUDing excellent gun, belt, holster, clip holder, two extra clips, $55.00. Remington .41 Double Derringer, excellent, 75 rounds, $35.00. Ed Betz, Life Member, 1510 S. Mint St., Charlotte, N. C. 6-43

PARKER VH 12/30 FULL, WITH CASE $67.50, Luger 9MM 4" and 190 cartridges, $57.50, 4 Boxes 30 Remington $7.85. WANT—L. C. Smith 16/26 IC-Model SST-AE, Outboard Motor. J. G. Barnett, Waxahachie, Texas. 6-43

TARGET AND DEFENSE AUTOMATICS, Revolvers, Shotguns, Rifles. 4½" Sport Model Woodsmans, 6½" Target Model Woodsman, also Match Target Woodsman, Hi-Standards Model "B", "D" and "E". Most all caliber Revolvers and Automatics. List Ready. Stamp Please. Dept. N.R. Rudolph's, Atchison, Kansas. 6-43

WANTED—#209 WINCHESTER OR #57 Remington Shotgun primers, Small rifle primers, cases, 30-30, 348, 32 Winchester Special, 270, 300 Savage. Bullets, 30-30, 32 Winchester Special, 300 Savage. Jim Clark, 2029 W. Fondulac, Milwaukee, Wisconsin. 6-43

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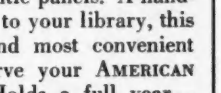
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TRADE—MODEL 99-R SAVAGE, 250/3000. NEW condition, for S. & W. .357 Magnum, 5" barrel, new condition. C. MacGowan, Easthampton, Mass. 6-43

WANTED—EMPTY CASES, NEW OR used. In good condition, 30-30, .32 Special, 7mm, 38-55, Hornet, 250-3000. Will pay your price or trade any items listed in this issue. Robert Haelig, Boundbrook, N. J. 6-43

WANTED—M70 STANDARD .257 ROBERTS, excellent or better. Reed White, Susanville, California. 6-43

WILSON AGAIN NEEDS AUTOMATIC pistols: .32, .380, .45, .38 Super, .30 caliber and 9MM Luger. We will take the above guns in trade on anything in our stock. Give your best price in first letter. Very large quantities wanted. Wilson's, 3082 W. 25th St., Cleveland, Ohio. 6-43

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FOR SALE OR TRADE—COLTS GOVT. MODEL 1917, condition excellent to perfect with ammunition and clips. Gun, $32.50; ammunition 5¢ each. Interested in Sisk .22 bullets, primers, good target scope, or good Enfield action. Dr. Guss C. Salley, Warsaw, Missouri. 6-43

WANTED—.32-40 WINCHESTER HIGH WALL or Stevens 44½. Also cases, tools, and mould, reasonably priced. C. Baldwin, 2420 Rebecca, Sioux City, Iowa. 6-43

WANTED—SHOTGUN AND DEER RIFLE. ALSO .220 Swift. Andrew Kenney, 7913 Inglenook, Pittsburg (21), Pa. 6-43

COLT .38 SUPER MATCH, EXCELLENT TO perfect, three boxes factory cartridges, #103 Tri-Pak rod, Heiser belt holster, spring shoulder holster, outfit, $75.00. King Riflite shooting glasses, never used, $7.50. R. W. Seasholtz, 1204½ E. Market Street, Sunbury, Pennsylvania. 6-43

WANTED—.30-06 SPRINGFIELD OR ENfield as issued, also Bayonets. Robert Abels, 860 Lexington Ave., New York, N. Y. 6-43

WILL TRADE WINCHESTER 54, 30-06, V.G. out, perfect in, for 54 or 70 in other caliber, preferably Varminter, Swift, .257, or Hornet. Robert Haelig, Boundbrook, N. J. 6-43

TRADE—SAVAGE 19H WITH WEAVER 344, very good and money, for .30-'06 like condition. G. B. Ewing, East Branch, N. Y. 6-43

FOR RENT—MOULDS, INCLUDING IDEAL 456122 H. P., 375496 G. C., B. & M. 279125. TRADE—Vion 33X, Weston Jr. exposure Meter, for Winchester 56-22 short, or Winchester Musket. Helmer Romness, Zumbrota, Minnesota. 6-43

MY COLLECTION OF TARGET RIFLES, SMALLbore and bigbore, single shot and magazine guns, a few Handguns and Perc. M. L. Shotguns are for sale. List with prices and description for 3¢ stamp. Jacob J. Muntener, 35 Eckel Rd., Little Ferry, New Jersey. 6-43

ILLUSTRATED CATALOG OF ANTIQUE Pistol, Rifles, Swords, Rapiers, Daggers, Armor; 25¢ Robert Abels Shop, 860 Lexington Ave., New York, N. Y. 6-43

WANTED—POWDER MEASURE, IDEAL, Belding & Mull, or Modern-Bond. Pacific Dies, shell holders, almost any calibers, especially Varminter, .257, Hornet, .220 Swift, 8mm and .35 Remington. Ideal Sizer and Lubricator. Will pay cash or will trade, see other ads. Robert Haelig, Boundbrook, N. J. 6-43

WILSON HAS FOR SALE OR TRADE: Model 121 H. & R., 20 gauge, 5 shot, bolt action, new in cartons, $19.25. Savage, Model 23, .32-20, good, open sights and sling, $27.50. Remington 14, .35 caliber pump, V.G., $50.00. Savage 99 Take-Down 22 H.P., good in, fair out, $30.00. Savage 99 E.G., .300 Savage caliber, very good, $50.00. New Stevens .22-410 Over & Under, Tenite stock, $19.75. Winchester Model 01, 10 gauge, lever action, very good to excellent, $45.00. Browning 12 gauge Over & Under, cylinder bore, twin single trigger, $125.00. On any of the above we will take in trade automatic pistols in calibers .32, .380, .45 or .38 Super, also .30 caliber and 9MM Luger. Send stamp for new list. Wilson's, 3082 W. 25th St., Cleveland, Ohio. 6-43

WILL TRADE 300 ROUNDS COLT 38 SUPER Automatic Cartridges for 38 Special regular, or 38 Special Midrange or 22 High Speed Hollow Point Ammunition. F. Dwight Foster, Conover Lane, Red Bank, N. J. 6-43

STEVENS, 20 GAUGE, DOUBLE, HAMMERLESS, M/530, V.G. in, good out; box 6C Nitro Express and box of Super X; also cleaning rod, $27.00. R. E. O'Reilly, 3005 S. Webster St., Fort Wayne, Indiana. 6-43

WANTED—WILL PAY UP TO $75.00, more if necessary, for Colt Service Ace. Will pay up to $60.00 for Colt Conversion Unit with Floating Chamber. These items urgently needed for defense training. Can use several of each. Excellent appearance preferred but not essential. If cash is no good will trade any items advertised in this issue or many other attractive items now on hand. Cash will be sent immediately upon receipt of offers. Robert Haelig, Boundbrook, N. J. 6-43

FOR SALE—SMITH & WESSON K22 KITGUN, 4" barrel, very good condition, target grips and Heiser Holster. Send in offers. F. Dwight Foster, Conover Lane, Red Bank, N. J. 6-43

WANTED—FOR CASH: 44 COLT AND Remington Percussion Revolvers, poor to fine. Robert Abels, 860 Lexington Ave., New York, N. Y. 6-43

WANTED — ADDING MACHINE, REDfield junior mounts for Winchester 54 or 70, 7X35 or better Monocular. Junior, Regular, or Super Targetspots. Will pay cash or trade. Carl Zeiss Monocular Spotting Scope, 18 X 50. 12 Ton Hydraulic Jack. Hydraulic Vise & Press. Small Screw Cutting Lathe (Sears, about 2½" swing, 30" bed). New 5¾ H.P. Waterwitch Outboard. Or will trade any other items listed in this issue. All items in this issue offered in trade are for sale also. Robert Haelig, Boundbrook, N. J. 6-43

FOR SALE—WINCHESTER 52 SPORTER, EXcellent, Lyman 48F rear, Vaver front; also Redfield gold bead ramp, with 1100 rounds ammunition, $100.00. Lt. Jerow D. Brill, 528 Harden St., Columbia, S. C. 6-43

RED WING MARINE ENGINE, MODEL B, starter, bore 4½ inches, stroke 5 inches, medium heavy duty, 44 horsepower at 1400 r.p.m., cost $900, guaranteed as new, $550.00. Remington 30 express, 30-06, excellent $45.00. Springfield sporter, 30-06, #1094482, Stoeger custom stock, Pacific ramp front, Lyman 48 rear, excellent, $100.00. .300 Savage, 99 E.G., unfired $61.75. High rubber boots, unused, ball band, size 8½, $7.50. 8 Cylinder Chrysler Automobile engine, excellent, $35.00. Hand made surf rod with 250 yard reel and Montague salt water rod with 200 yard reel, $8.00. Unused Economaster electric heater, A. C. or D. C., $15.00. Delco electric motor, 1/6 h.p., A.C., 1750 R.P.M., $16.00. Two double fall and two triple fall blocks, as new, take one inch diameter line, $7.00 a pair. Three inch liquid boat compass, excellent, $10.00. Steel combination house safe, dimensions 10 inches by 13½ inches, $25.00. 135 feet unusued ¾ inch Manilla rope, $7.00. 100 feet slightly used one inch Manilla rope, $6.00. Boat fog horn, 6 volt, Cost $25.00, excellent $7.50. 6 boxes Western 30-06, 220 grain soft point, $15.00. 5 boxes Remington 30-40 Krag, $10.00. Seth Thomas Ship's clock, half hour strike, excellent, $35.00. Seth Thomas Ship's clock, brass, chrome finish, non striking, excellent, $20.00. Pair six foot ash boat oars, excellent, $3.00. John Nolan, 154-33 12th Rd., Whitestone, N. Y. 6-43

NAME YOUR OWN PRICE — WANTED — primers all sizes. All letters answered. C. W. Southworth, New Hartford, N. Y. 6-43

ITHACA #4 GRADE 20 GAUGE, 26" MODIFIED and full 14 X 1¾ X 2¾. Gold triggers indicators, beautiful stock and fore-end, fancy checkering gold name plate, weight 6 lb., perfect second hand condition, cost $160.00, sell $110.00, have shells. H. J. Ferry, Longmeadow, Mass. 6-43

WANTED—.45 CALIBER S. & W. M1917 REvolver, good or better. Lt. Benjamin P. McKnew, Co. L, 3rd Ord., Tng. Regt., Aberdeen Proving Ground, Md. 6-43

UNERTL-BI MAG 2X FOR PRECISION work of any kind, $6.75, Postpaid, folder free. Flaig's Hunters Lodge, Millvale, Penna. 6-43

.45 COLT AUTOMATIC, GOOD CONDITION $45.00; .45 Colt Automatic Commercial, excellent, $60.00; .32 Colt Automatic, good $25.00; .32 Remington & Savage Automatics, good $20.00 each; .25 Colt Automatic, good $25.00; .30 Luger, excellent, original Berlin holster $60.00; .30 Luger, good, $45.00; 9mm Luger 7½ inch barrel; adjustable sights, drum clip, excellent $75.00; .38 Special Colt Army Special, good $40.00; .38 Special Colt Police Positive, good, $35.00; .357 Magnum Colt Frontier single action, excellent, $85.00; .32/20 & .45 Colt Bisley Frontier very good, $45.00 each; .32 Austrian Police pistol 2½ inch barrel, good, $15.00; .22 H. & R. National Match single shot target pistol 10 inch barrel, excellent $35.00; write for complete list. Elliott Gillespie, 4816 S. Aldrich Ave., Minneapolis, Minnesota. 6-43

RIFLES, WINCHESTER .22 AND WRF, $18.00 (WRF shells three cents each) excellent; Hi-Standard C, two extra clips, $30.00; excellent, 10 gauge cannon, $12.00; tents. W. J. Whittaker, 5410 Wentworth, Chicago, Illinois. 6-43

WANTED—SPOTTING SCOPE NEW CONDITION. Argus preferred, with extra eye-piece; also #1½ primers and powder scale. J. E. Steckley, 726 S. Garland Ave., Los Angeles, California. 6-43

WANTED — .45 AUTOMATIC COLT frames or complete guns in poor condition. E. S. Burrell, 717 Wyndmoor, Chestnut Hill Philadelphia, Pennsylvania. 6-43

WANTED—WINCHESTER 75 TARGET RIFLE with iron sights and Winchester 8 X Scope. Must be excellent to perfect, pay cash. Dr. T. J. Egan, Bancroft, Iowa. 6-43

WANTED—1920 SAVAGE OR .03 SPRINGFIELD or M70 Complete Action only, state condition and Price. G. W. Fuller, 3064 California St., Huntington Park, California.

FOR SALE—300 ROUNDS .38 COLT SUPER Automatic Cartridges at $2.50 a box. F. Dwight Foster, Conover Lane, Red Bank, N. J. 6-43

WINCHESTER 52 HEAVY, 17A, 48J, VERY good, 500 L. R., $67.50. M-1 Springfield .22 caliber, 17A, 48, very good, 500 L. R., $52.50. Will trade for Varmint Rifle, small Target Scope. Sam Bond, New Philadelphia, Ohio. 6-43

NEW COMMERCIAL .45 COLT, MODEL 1917, latest, unfired, checkered grips, Blue, 100 shells, $50.00. Smith-Wesson .38 Special, pearl handles, Barrel and mechanically perfect, B-4, outside good, $35.00. Smith-Wesson .38, safety hammerless, blue barrel and mechanically perfect, B-3¾, outside good to excellent, $20.00. Piano Accordion, Century, by General, 18 inch, 120 bass, treble shift, black, and case, excellent condition, $200.00, M.O. only. A. P. Hedlund, 219 Metropolitan Bldg., Minneapolis, Minnesota. 6-43

SELL OR TRADE—REMINGTON 121 "FIELDmaster", with 500 long rifle, excellent, $42.50. WANT—70-250 Carbine, High Grade double shotgun, Alaskan. TRADE—.25 caliber bullets. Earl Price, Lodi, Wisconsin. 6-43

.45 COLT 1911 CARVED BUFFALO HORN grips. Navy Eagle, shield, anchors and anchor on left, Good, $50.00; Fox 12 standard, good $35.00; .44 Remington single action, good, $18.00; Remington 12 Automatic, Cutts, very good, $60.00; Smith 12 crown steel, needs stock, $25.00; 6 X 30 B & L, ½ Binocular, $10.00. Lo Wall Winchester $8.00; Marlin .22 Automatic, good, $20.00; Hilliard .38 Target Rifle underhammer with Cummings scope, accurate, $75.00; Over and Under Percussion Kentucky .44 rifled .27 silver inlays, ½ stock, accurate, $20.00. Lt. Roy Vail, USNR, write Mrs. Roy Vail, Warwick, New York. 6-43

M. C. AMMUNITION 30-40, 30-06, 45 C. A., state condition, year, price. Flaig's Hunters Lodge, Millvale, Pennsylvania. 6-43

SPRINGFIELD STRIPPED RECEIVERS, AS issued, $7.50, heat-treated, $9.00 each. Complete bolt assemblies, $9.20, trigger guards, $3.60, extractors, $1.50, ejectors and cut-offs, $0.50 each. Other parts, price on application. .30-06 empties, fired once, decapped, FA and RA 1941, $1.00 per hundred. All parts for Colt .45 automatic and S. & W. Model 1917, except frames and barrels, prices on application. All above goods f.o.b. Philadelphia. No orders less than $1.00, please. E. S. Burrell, 717 Wyndmoor, Chestnut Hill, Philadelphia, Penna. 6-43

STEVENS 12 GAUGE PUMP 30" FULL. VERY Good, $50.00; Baker 12 gauge trap ventilated rib. Automatic ejector, Very good, $60.00; Remington .44-.40 slide action, very good, $35.00; Winchester 71 deluxe .348 (new), box shells, $95.00; Remington 141 Model .35 caliber .29S Weaver scope, sling (new) three boxes fresh factory ammunition, $95.00; Colt O. M. H. barrel, three boxes shells, very good, $55.00. Radio, push button (Fits all '39 Packard cars), $15.00; 35 Kodak .35 M. M., F.3.5 lens. Case. Flash gun, sun shade, range finder, filters, carry all case, film, $95.00. D. D. Green, 100 S. Carol Blvd., Upper Darby, Pennsylvania. 6-43

WANTED — FOR CASH: ANTIQUE Pistols, Rifles, Swords, Daggers, World War Rifles, Relics, Collections, Single Pieces. Robert Abels, 860 Lexington Ave., New York, N. Y. 6-43

WANTED—.22 AMMUNITION. WILL PAY $13.50 per 1000 for shorts, longs or $16.00 for long rifles. Write Air Mail to: George LaMarr, 2205 Boardwalk, Atlantic City, N. J. tf

WANTED—FOR CASH. REASONABLY PRICED 330-C. .250 hand tools and components, Springfield Service 30-06. TRADE—Winchester factory Swifts and 12 gauge shells for .22 long rifle ammunition. D. McFadden, 201 W. Eklund, Hoquiam, Washington. 6-43

FOR SALE—EXCELLENT 2-R LOVELL, HIGH Sidewall Winchester action, Diller relined barrel, chambered and fitted by C. C. Johnson, custom built curley walnut stock, turret head reloading tool complete for same, 350 primers, 350, 50 grain Sisk Lovell bullets 200 empty cases, 100 loaded cases, sling strap, all in excellent condition, $135.00. L. R. Bolenbaugh, Kenton, Ohio. 6-43

ABESSER & MERKLE, 3 BARREL, HAMMERless, 12, .30-30, 3 ring steel, highly engraved, $150.00. Enfield, Bishop stock, excellent in, good out, 200 F.A. cartridges, $50.00. WANT—Double rifle, 52 Sporter, Jr. Targetspot, 303 Farquharson. F. F. Tubbs, 3647 Lilac, Lansing, Michigan. 6-43

WANTED—44 SPL. S.A.A. CYLINDER. PAY full price if in new condition. C. C. Buckley, R. D. 2, Sharpsville, Pa. 6-43

FOR SALE—PAIR L. C. SMITH 12 GAUGE specialty grade 30" barrels with forend, $30.00. Pair L. C. Smith Ideal Grade 12 gauge 26" barrels, $10.00. WANT—348 and 30 Luger ammunition. Dr. Gilbert Hoppenstedt, 709 York Road, Towson, Maryland. 6-43

FOR SALE—WOODS' THREE STAR ROBE. 90x90, perfect, $70.00. Batavia Leader, 12 gauge double, cylinder, fair, $15.00. Perfect Weaver 330S Stith mount, $40.00. WANT—Small camera. H. W. Mildren, Naval Air Gunners School, Hollywood, Florida. 6-43

WANTED—MODEL E. OR H. E. HIGH STANDard. S. & W. 357 Magnum, .38 Special or .38-44 Outdoorsman. Must be excellent to perfect. Also reasonable. C. L. Brown, 606 Thatcher Building, Pueblo, Colorado. 6-43

BELGIAN FABRIQUE NATIONALE DOUBLE Barrelled 12 gauge Shotgun, final proof mark, 45 rounds new Ammunition, carrying case, excellent, cost $225.00, will sell $150.00, Fox-Stevens 20 gauge double barrelled Shotgun CE grade. Automatic shell ejector, excellent, cost $150.00 will sell with 25 rounds new ammunition and leather case for $125.00, really beautiful piece especially for Lady. Winchester 25-35 caliber takedown rifle, Model #55, fired once, 50 rounds new ammunition and case, $47.50. Tiffany 18K solid gold Gentleman's wrist watch, 17 jewels, movement by Hamilton, perfect, cost $300.00 for $125.00. Estate will accept $425.00 for lot, or sell individually. Roger Bawin, 1531 59 Street, Brooklyn, New York. 6-43

WINCHESTER .218 BEE, EXCELLENT, $55.00, Fox 16 gauge Sterlingworth, ejectors Very Good, $60.00. John Rigby, 12 ejectors, 7 lbs. beautiful gun, $400.00. Parker V.H. 12-30 V.G., $60.00. Fox 12-30 Sterlingworth V.G., $40.00. Sauer 12-26 6 lbs. V.G., $85.00. Winchester 95, 30-40 Rifles, good, $40.00. Winchester 52, standard barrel, 17A and battle rear, V.G., $60.00. Krag, as issued, sling, $25.00. Savage 303, Lyman, very good, $37.50. Savage 303, carbine, excellent $45.00. Colt 32 Police Positive, 4 inch, excellent, $40.00. 44 S. & W. Special, 6 inch, $50.00. Winchester 92, 25-20, good, $25.00. Winchester 97-12 take down, 30 inch, good, $35.00. Several 94 Winchesters 38-55, 32-40, $20.00 up. Winchester 12-12, $30.00, $40.00 and $50.00. Remington 81-35, as new, $85.00. Winchester 64, 30-30, deluxe, Redfield rear, Triple bead, front, V.G., $65.00. Greener 12-30, ejectors crown $350.00. Harry L. White. Church St., Burlington, Vermont. 6-43

WANTED—ANY JACKETED 30 CALIBRE BULlets, primers, 30-30 and 300 Savage cases suitable for reloading. Wallie Burnham, 2154 Pearl St., Seattle Washington. 6-43

SELL — 15,000 8½ NEW NON-MERCURIC primers, $9.50 per thousand. J. F. Stevens, 1729 S. 10th St., St. Louis, Missouri. 6-43

B. & M. LOADING TOOL, CRADLES, NECK sizing dies, Model 26 bullet seaters for 38 S. & W. Special & .30-06; also Lyman ideal full length resizing die for .30-06 cases, plus 400 .30-06 empties, $32.00. WANT—Lyman #5 Powder measure and #115 primers. L. Masche, Ripon, Wisconsin. 6-43

TRADE—30-06 GOV'T 1936 ISSUE CARTRIDGES for clean shotgun shells, 30-30 and 300 caliber Savage Cartridges or will sell at 7½¢. Andrew Larson, Springfield, Minnesota. 6-43

FOR SALE—COLTS NEW SERVICE 45, A.C.P. 5½ inch barrel, extra 45 long Colt cylinder, and extra 7½ inch barrel, with 100 cartridges, perfect, in factory box, $75.00. Colts 22 Automatic, 6¾ inch barrel, fair inside, outside good, 250 .22 Long Rifle cartridges, $39.50. Frank A. Efinger, Main St., Boundbrook, N. J. 6-43

TRADE—TEN VOLUMES "HISTORY OF THE World", by Ridpath, 10½ X 7¾, 375 pages per volume, good. WANT—Howe's "The Modern Gunsmith." Steve Lakcsik, 1923 S. Scott St., South Bend, Indiana. 6-43

WANTED—LOADING TOOL FOR 44-40, PREFER dies for #24 Schmitt, can also use other Schmitt dies and powder measure. Renn Torbert, Kalispell, Montana. 6-43

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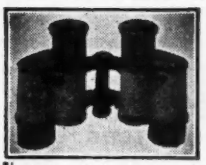

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BUSCH 8X30 PRISMATIC LIGHTWEIGHT (16 ounces) Binoculars, new condition, with carrying case, $85.00. J. T. Duffy, 1321 Delafield Place, N. W., Washington, D. C. 6-43

BIG, NEW SINGLE SPECIMEN PRICE list #405 of Cartridges for collectors .20 coin or stamps. Chas. Shattuck, Cherry Creek, N. Y. 6-43

COLTS .41 D.A. FRONTIER $18.00; 9MM Luger; .38 S. & W. hammerless; .45 Automatic. WANT—.44 S. & W., Savage M99, Lathe, Reloaders, Moulds. Raymond Jones, Cozaddale, Ohio. 6-43

HB WINCHESTER 52 CUSTOM MONTE CARLO Stock, excellent, very accurate, fine pull, Vaver sights, 500 rounds, $80.00. Fox Sterlingworth, Beavertail, single trigger, ivory and red bead sights, straight burl stock, pad, 12 X 26" cylinder and improved, box shells, $65.00. Ithaca, Field Grade, 12 X 28, box shells, $30.00. H. Gould, Alfred, N. Y. 6-43

WILL TRADE 30-40 WINCHESTER MODEL 95, outside good, very good bore, for 300 Savage Model 99. Ernest Morgenthaler, Midway Station, Route 3, Niles, Michigan. 6-43

WANTED—7 X 35 BAUSCH & LOMB BINOCULARS. Prefer C. F. Featherweight. B. R. Straker, Zanesville, Ohio. 6-43

WANTED—HORNET, M54 WINCHESTER, M70 Winchester or Single Shot High Side Wall. All replies answered. What have you? W. W. Berchtold, 707 Maryland Avenue, York, Pa. 6-43

WANTED—PARKER 16 GAUGE 26" FROM CH to AI grade. Must be excellent, describe fully, examination privilege. H. W. Lewin, 44 Crest Avenue, West Haven, Conn. 6-43

SELL—WATSON 2¼ X 3¼ MINIATURE PRESS Camera. Ektar F3.7 in Supermatic #2. Pack Magazine, 3 Dougle Holders, VI Filter, Portra Lens, Adapter Ring and Hood, as new, $120.00. TRADE—8X individual focus Binoculars, good out, new optics, for Hi-Standard Hammer Model HD. General Electric Photo Meter, perfect for 6X scope. Peter MacGregor, 2079 Anchor St., Philadelphia, Pa. 6-43

WANTED—N.C.N.M. SMALL PISTOL PRIMERS. Ideal sizer & Lubricator (or equivalent) 38 Special Dies, 146 grain Wadcutter Bullet Mould 38 Special Caliber, Pacific Powder scale with weights. Wanted in excellent condition. Member N.R.A., Ray L. Bieber, 262 Lee Avenue, Box 493, Pottstown, Pennsylvania. 6-43

FOR SALE—15 POWER SPOTTING SCOPE. Excellent, Made by DuMaurier from B. & L. Trench Periscope, $17.50. 45 A.C.P., 1917, Colt revolver, excellent, except poor Wartime Blueing job, 4 clips, 100 Peters Police Match Cartridges, $42.50. Remington S.S. Rolling Block, rebarreled with new, 30-40 Krag barrel and blued by Sedgley, excellent except rear sight elevating screw bent, 18 Remington S.P. Kleanbore, $22.50. Winchester, 32 Model 1907 Autoloading Rifle, 3 extra clips, 100 non-corrosive, soft nose Cartridges, good to very good, $47.50. Antique Ladies 20" 14K solid gold neck chain, very heavy 3 way link construction, a beautiful chain at about one half its value, $45.00. 23-J Hamilton, size 12, pocket watch, heavy gold filled, used less than six months, excellent, cost $100.00, $65.00. Above items are F.O.B., Greenville, S. C. Money will be refunded if not entirely satisfactory. H.B. Bibb, Ottaray Hotel, Greenville, South Carolina. 6-43

52 WINCHESTER SPORTER (DELUXE). FIRED 200 times. Owner going into Service and will sell at cost. Completely equipped with 330 scope attached at Weaver factory, 48F Lyman, and folding Marble's sights. Beautiful sheepskin case, hickory cleaning rod, extra clips, and 2000 long rifles. For first $195.00 money-order. Dr. Clyde Miller, Methodist Hospital, Indianapolis, Indiana. 6-43

TRADE—FACTORY REBUILT 45 S.&W. MODEL 17, new barrel, new grips. Reblued, fresh box ammunition for 30-06 Enfield, good bore. Russell Starn, 624 Duryea, Raymond, Washington. 6-43

SAVAGE .22 HI-POWER, M99, SOLID FRAME, 24 inch Sedgley barrel, Restocked, Pistol grip, Weaver Old Type 330 Scope, very good. 125 Cartridges, 200 Empties, 2000 bullets. Sell complete only, $110.00. American Rifleman, last eight years, $8.00. Charles N. Cox, 919 Prince St., Alexandria, Virginia. 6-43

WANTED—LUGER 7.63, GENUINE ONLY, PERfect excellent. 200 Cartridges, reasonable, describe fully. Guy R. Stephens, 5830 Henner Avenue, St. Louis, Missouri. 6-43

TRADE—HAVE SEVERAL THOUSAND #116 Winchester, NMNC small rifle, primers in sealed packages, will trade for 38 Special, solid head, empty cases in good condition, 1000 primers for 2000 cases. Will pay express on cases, primers to be shipped express collect. A. A. Rawlins, 5543 McComas, Dallas, Texas. 6-43

COLT NATIONAL MATCH .45, EXCELLENT. King Micrometer rear sight, undercut front sight, new barrel, three clips, Lawrence belt holster, 230 round ammunition. $85.00, F.O.B. Montclair. James N. Stewart, 20 Graham Terrace, Montclair, N. J. 6-43

WANTED—MODEL 70 WINCHESTER .30-06. Standard or Super Grade, perfect or excellent, number five powder measure, for cash. All letters answered. Vincent Frew, 338 Park Avenue, Ottumwa, Iowa. 6-43

WANTED—FOREIGN AND DOMESTIC cartridge and gun catalogs. State Company, date or number and price. H. P. White Company, Box 1852, Cleveland, Ohio. 6-43

WANTED—Model 70 WINCHESTER SUPER OR Standard 257 Roberts with Lyman 48. Perfect or excellent condition with ammunition. Ingle O. Johnson, Route #1, Box 86, Lyons, Oregon. 6-43

REMINGTON .22 AUTO RIFLE, FIRST model, very good, with 6 boxes Remington Kleanbore, $20.00. Short Krag, 1898, very good, with 90 cartridges, $30.00. Colt .25 Auto, good, $18.50. Ask for Gun, Curio and Weapon list, 5¢. Vernon Lemley, Osborne, Kansas. 6-43

TRADE—500 .22 L.R. FOR FIRST CHOICE Mauser 98 Rifle; 500 Shorts, H.S. H.P. for second and third choice before June 20. Ship by express collect to Paul Ratliff, Market, Spokane, Wash. 6-43

BINOCULARS: HENSOLDT, FEATHERweight, "Roof Prism", 6 x 30, leather carrying case, perfect optics, $95.00. Will trade. Jim Clark, 2029 W. Fondulac, Milwaukee, Wisconsin. 6-43

WANTED—COLT DETECTIVE SPECIAL, Match Target Woodsman, Shooting Master or New Service Target; the last two for the .45 Colt Auto cartridge. Also Lyman Super Targetspot in 10, 12 or 15 power with mounts. All items must be perfect or excellent. State price wanted. A few 12 gauge trap loads, .22 Long Rifle, or .30-06 factory loads will be submitted by me as part payment if seller so desires. Philip G. Rust, Granogue, Delaware. 6-43

NEW EMPTY CASES FOR .45 AUTO, UNprimed, $3.36 per one hundred. DuPont Powders. Badger Shooters Supply, Owen, Wisconsin. 6-43

SELL OR TRADE—(BARREL ONLY) FOR Model 70, 20" Carbine length, cal. .30-06, excellent, $10.00 or 1000 N.M.N.C. Primers #8½, #9½, #115 or #120. First M. O. or Primers in sealed packages. W. F. Ruggles, 141 Ashland St., Melrose, Mass. 6-43

WANTED—7½" .44-40 SINGLE ACTION ARMY barrel, new or very good. L. O. Thoe, 5464 Village Green, Los Angeles, Calif. 6-43

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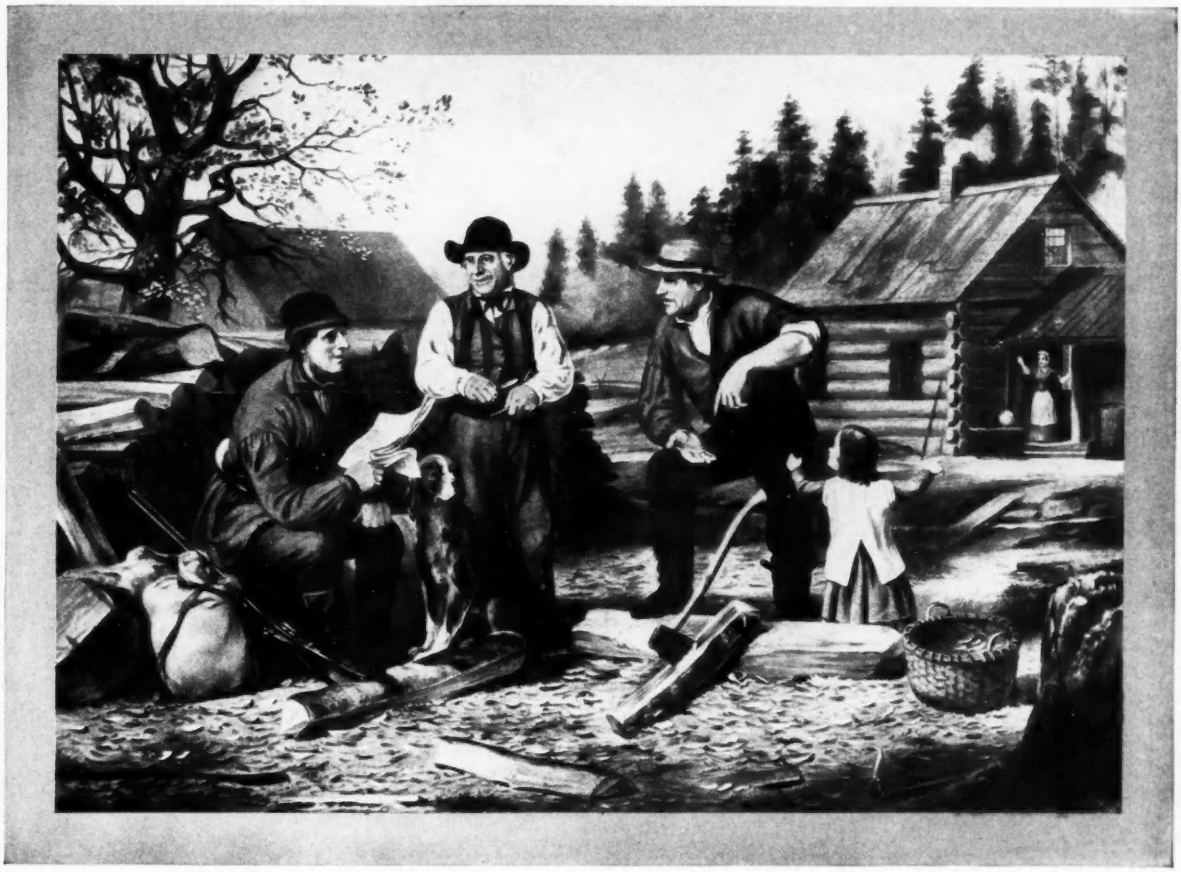

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